# OKIOFFICE84, OKIFAX 4500

## Maintenance Manual

**Fourth Edition**

**October, 1999**

## Oki Data Corporation

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# PREFACE

This manual is intended to be used for installing and maintaining OKIOFFICE84, OKIFAX 4500 facsimile transceiver.

Maintenance of the OKIOFFICE84, OKIFAX 4500 is assumed to be conducted at the following levels:

- Assembly-level maintenance for mechanical portions
- Unit-level maintenance for electrical at portions

CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS
and
ATTENTION: IL Y A DANGER D'EXPLOSION S'IL Y A REMPLACEMENT INCORRECT DE LA BATTERIE. REMPLACER UNIQUEMENT AVEC UNE BATTERIE DU MEME TYPE OU D'UNT TYPE RECOMMANDE PAR LE CONSTRUCTEUR. METTRE AU REBUT LES BATTERIES USA GEES CONFORMEMENT AUX INSTRUCTIONS DU FABRICANT.

Programming procedures of the following uses's functions are not described in this maintenance manual.
Please refer to user's guide.

- One-touch key programming
- Two-digit auto dial programming
- Group setting
- Programming mail box password
- Memory operation

**ODA/OEL, INT'L MODEL NAME**

| ODA | OEL/INT'L |
|---|---|
| OKIOFFICE84 | OKIFAX 4500 |

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# Document Revision History

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| | | Appendix B | Correction of page B-11. | |
| | | Appendix C | Correction of R51 circuit diagrams, R51 parts list, WN5 parts list (3/3), DN5 parts list (4/4), FN5 parts list (3/3), MPW1446 circuit diagram, MPW1446 parts list, P2H parts list (2/3) and 6L parts list (1/1). | |
| | | Appendix F | Correction of page F-1. | |
| | | Appendix H | Addition of Troubleshooting Manual. | |
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| | | Appendix I | Addition of FAX2NET Function | |
| | | | | |

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# *CHAPTER 1*

# *GENERAL INFORMATION*

## 1.1 General Performance

(1) Type of appearance
- Desktop type

(2) Applicable lines
- General switched telephone network (GSTN)
- Private branch exchange (PBX)

(3) Compatibility
- ITU-T Group 3 facsimile transceiver

(4) Document width
- Max. 216 mm (NA Letter)
- Min. 148 mm (ISO A5 size)

(5) Effective reading width
- Max. 215 mm (NA Letter)
- Max. 208 mm (ISO A4 size)

(6) Scanning length
- 128 mm to 356 mm
  (Length setting: Unlimited (1500mm) is also available.)

(7) Automatic document feeder (ADF)
- 20 sheets (NA Letter/A4-size: 20-1b bond/75 gm. Oki Data recommended paper)
- 15 sheets (NA Letter/A4-size: 16 to 28-1b bond/60-105 gm)

***Note:*** NA is North America

(8) Recording paper or sheet

| | |
|---|---|
| • 1st tray: | NA Letter/NA Legal/A4-size plain paper cut<br>100 sheets capacity (20-1b bond*) |
| • Manual paper feeder: | Transparency for overhead projector, applicable.<br>Sheet size: NA Letter/NA Legal/A4-size |

*: Oki Data recommended paper

(9) Printable width

| | |
|---|---|
| • NA Letter: | 203.2 mm (203.2 mm for assured quality) |
| • NA Legal: | 203.2 mm (203.2 mm for assured quality) |
| • ISO A4: | 203.2 mm (197.3 mm for assured quality) |

(10) Printable length

| | |
|---|---|
| • NA Letter: | 273.4 mm (266.7 mm for assured quality) |
| • NA Legal: | 349.6 mm (342.9 mm for assured quality) |
| • ISO A4: | 291 mm (284.3 mm for assured quality) |

(11) Copy stacker
- Max. 30 sheets

*: Oki Data recommended paper

(12) Scanning resolution
a) Horizontal:
- 300 dot/inch

***Note:*** In the local COPY mode at stsndard (STD) resolutions, the dpi conversion is done from 300 dot/inch to 200 dot/inch.

b) Vertical:

| | |
|---|---|
| Transmission mode: | 3.85 line/mm (STD), 7.7 line/mm (FINE), 15.4 line/mm (EX.FINE) or 300 dot/inch (EX.FINE) |
| COPY mode: | 3.85 line/mm (STD), 7.7 line/mm (FINE) or 15.4 line/mm (EX.FINE) |

(13) Scanning method
- 2592 bits contact image sensor

(14) Recording resolution

a) Horizontal:
300 dot/inch

b) Vertical:

| | |
|---|---|
| Variable: | Automatically adjusted to the paper length. (300 to 412 dot/inch), STD mode (3.85 to 5.06 line/mm) and FINE mode (7.7 to 10.13 line/mm) and EX-FINE mode (15.4 to 20.24 line/mm) |
| Fixed: | STD mode: 3.85 line/mm<br>FINE mode: 7.7 line/mm<br>EX-FINE mode : 15.4 line/mm<br>: 300 dot/inch |

(15) Recording method
- 211.3 mm (2496 bits) or 216.7 mm (2560 bits)

(16) Minimum scan line time for reception
- When receiving from OKIFAX or ECM: 0 ms
- When receiving from non- OKIFAX and non ECM: 10 ms at 3.85 line/mm
  5 ms at 7.7 line/mm, 15.4 line/mm

(17) Print speed
- Max. 8 sheets per minute (at NA letter size)
  (6PPM in the PC print mode if the paper width is 128 mm or less.)

(18) Pre-heating time
- Approx. 20 sec. (Standby to Print)

(19) Coding scheme
- Modified Huffman (MH)
- Modified READ (MR)
- Modified Modified READ (MMR)

(20) Modem
- ITU-T Rec. V.29: 9600 bps for use on point-to-point 4-wire leased telephone type curcuits.
- ITU-T Rec. V.27 ter: 4800 bps modem for use in GSTN (General Switched Telephone Network)
- ITU-T Rec. V.21 channel 2: 300 bps duplex modem for GSTN
- ITU-T Rec. V.17: 2-wire modem for fax applications up to 14.4 kbps

(21) Transmission speed
- 6 sec. per sheet of ITU-T No. 1 sample document

***Note:*** This is Phase C time at 3.85 line/mm and 14400 bps for 6 sec. in MMR code transmission.

(22) Protocol
- ITU-T Rec. T.30
- OKI special protocols: High-speed protocol

(23) Error correction mode (ECM)

(24) Communication mode
- Half duplex

(25) Image memory
- Basic model: 1M byte

(26) Liquid crystal display (LCD)
- Two rows of 20 characters for operation guidance, check and various kinds of information

(27) Power source
- Nominal input voltage 120 VAC for ODA version
- Nominal input voltage 230 VAC for INT'L version

(28) MFP (Multi- Function Peripheral) functions:
PC Printer Function
PC Scanner Function
PC Fax Modem Function
Location Programing Function

***Note:*** For details, see "Product Specification for MFP"
This function is standard in OKIOFFICE for ODA.

(29) FAX2NET functions:
- FAX over IP Function
- FAX to E-mail Function
- Virtual E-mail Function
- Web Retrieval Function

***Note:*** For details, see Appendix I "FAX2NET Function".

## 1.2 General User's Functions

(1) Transmit mode
- Automatic transmit mode
- Manual transmit mode

(2) Receive mode
- Automatic receive mode
- Manual receive mode
- TEL/FAX automatic switchover mode
- TAD mode
- Memory only receive mode
- PC receive mode (This function is the standard for OKIOFFICE of ODA)

(3) Instant dial

(4) Advanced T.30 protocol

(5) Dual access

(6) Voice request

(7) Automatic redial

(8) Last number redial (Manual redial)

(9) Local copy of a document, including multiple copies
- 50 copies max.

(10) Sender identification (Sender ID)

(11) Personal identification (Personal ID)

(12) Polling transmission
- Feeder Polling transmission
- Memory Polling transmission

(13) Polling reception

(14) Bulletin polling

(15) Acoustic line monitor

(16) Automatic alternate selecting call (FAX No. + FAX No. can be registered in one-touch keys).

(17) Delayed transmission (Max. 3 days)
- Delayed broadcast
- Delayed transmission
  5 specified times

(18) Relay broadcast initiate

(19) Confidential message transmission

(20) Confidential message reception
8 mail boxes

(21) PHOTO mode (at FINE resolution)
64 scale gradations

(22) G3 sequential broadcast (Memory)
- Broadcast mode
  90 stations at maximum
- Delayed broadcast mode

(23) No paper/no toner reception

(24) Memory-only reception
(Memory reception even if paper does not run out)

(25) Distinguishing text from picture

(26) Page re-transmission (Only in case of memory TX mode)

(27) Vertical reduction printing (Reduction rate is from 100% to 75%)

(28) Horizontal reduction (RX, copy : Reduction rate is from 93% to 98%)

(29) Smoothing printing (In case of 8 dots/mm x 3.85, 7.7 or 15.4 lines/mm → 300 dot/inch x 784 line/inch)
- Turns off in the PC print mode.

(30) Programmed key operation (“F” key + “OT” key)

(31) Auto dialing

| | |
|---|---|
| • One-touch dialing | 10 locations |
| • Two-digit automatic dialing | 70 locations |
| • Keypad dialing | |
| • Chain dialing | |
| • Mixed dialing | |
| • Group dialing | 5 groups |

(32) Real-time dialing
Dialing with telephone off the hook or when the Hook key is pressed.

(33) Automatic pause signal insertion

(34) Manual feeder local copy

(35) Telephone directory (Alpha search) dialing

(36) TEL/FAX automatic switching

(37) Time and date printing

(38) Closed users group (Direct mail rejection)

(39) Transmission contrast and resolution control

(40) Key touch tone

(41) Printer counter display (For drum, toner, total print)

(42) Total page counter (Scan)

(43) Quick scanning 6 sec. minimum → A4 size 3.85 ℓ /mm

(44) Time and date setting

(45) PC interface
- Standard: OKIOFFICE84
- Option: OKIFAX 4500

(46) Language selection
- 2 languages (LCD and Reports)

(47) Reports
- Activity report
- Active memory files report
- Protocol report
- Message confirmation report (Single address and multiple addresses)
- Broadcast entry report (Broadcast)
- Transmission error report
- Confidential reception report
- Configuration report
- Telephone directory
- Power outage report

(48) Restricted access

(49) Continuous alarm tone

## 1.3 General Maintenance Functions

(1) Self-diagnosis
- CPU ROM/RAM check
- FLASH memory check (Program, Language, Default)
- RAM check
- Print test

(2) Sensor calibration (Adjustment of scanning level)

(3) LEDs test

(4) Tone send test

(5) Multi-frequency (MF) send test

(6) High-speed modem send test

(7) High-speed modem receive test

(8) Tone (TEL/FAX) test

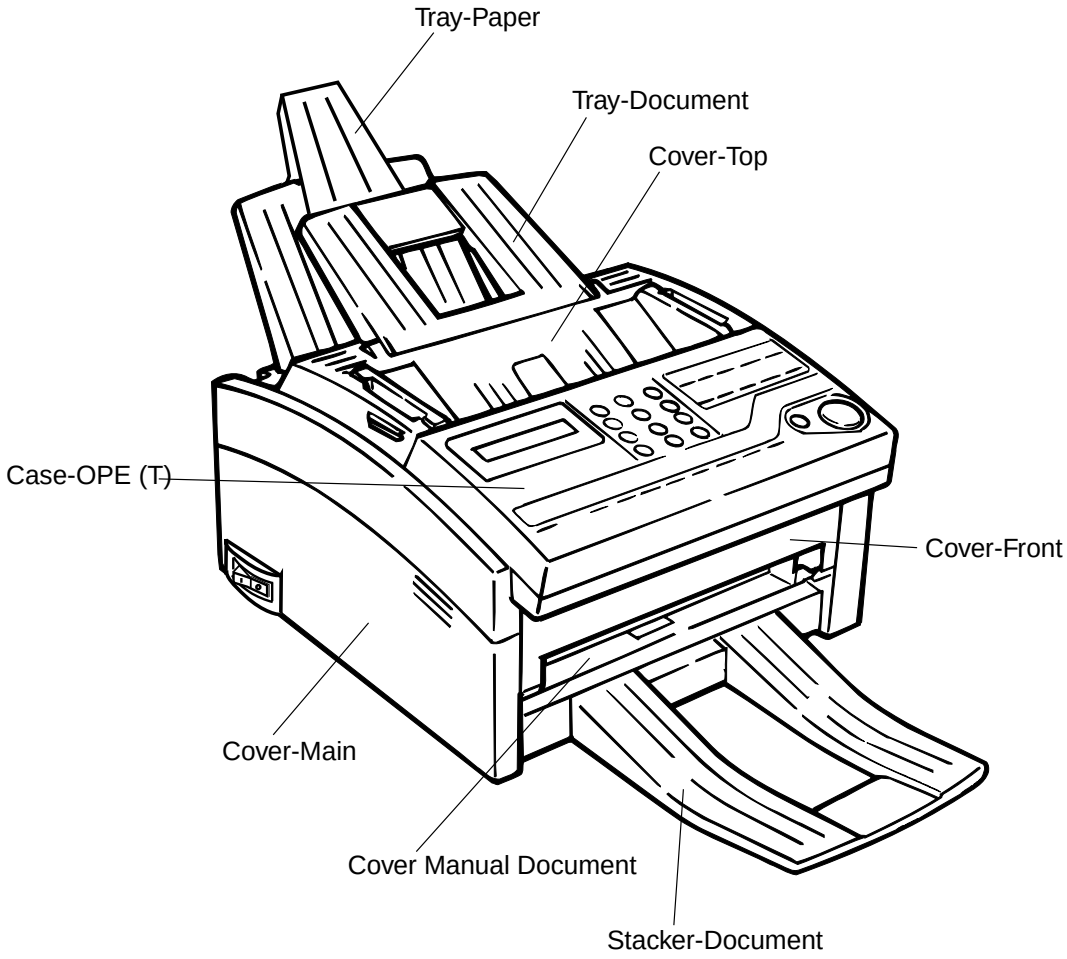
(9) Remote diagnosis

(10) System reset

(11) Service default report (Machine setting for service engineer)

## 1.4 General Appearance

Figure 1.4.1 shows the general appearance of the OKIOFFICE84/OKIFAX 4500.
Figure 1.4.2 shows the control panel of the OKIFAX 4500.




(FX051 CP4.1 Fig. 01)

**Figure 1.4.1 General Appearance of OKIOFFICE84/OKIFAX 4500**

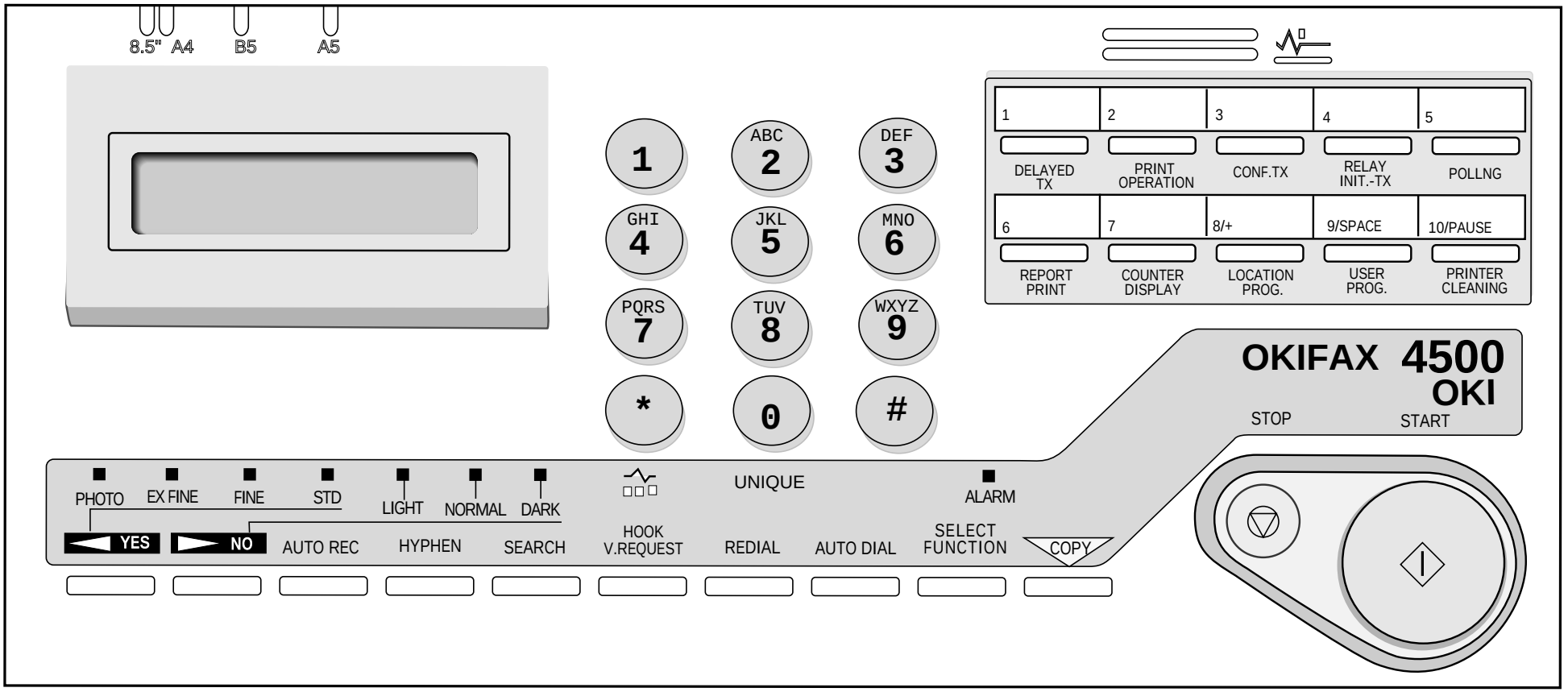



**Figure 1.4.2 Control Panel of OKIFAX 4500**

## 1.5 Basic Performance Specifications

Table 1.5.1 shows basic performance specifications.

***Note:*** TF: Technical function setting
FP: Function program setting
OT: One-touch key pressed
F: SELECT FUNCTION key pressed

**Table 1.5.1 (1/10) Basic Performance Specifications**

| No. | Item | Specifications |
|---|---|---|
| 1 | Applicable line | 1) General switched telephone network (GSTN)<br>2) Private branch exchange (PBX) (OT9+2) |
| 2 | Line interface<br>1) Impedance | 600Ω balanced<br><br>***Note:*** Impedance may differ by the requirement of PTT. |
| | 2) Sending power level | 0 dBm to –15 dBm range<br>(Adjustable in 1 dB steps. TF + 21) |
| | 3) Receiving power level | 0 dBm to –40 dBm or -6 dBm to -43 dBm |
| 3 | Type of document to be transmitted<br>1) Width | Max. 216 mm (NA Letter)<br>Min. 148 mm (ISO A5 size)<br><br>***Note:*** Effective reading width is NA Letter (215 mm). |
| | 2) Length | Min. 128 mm<br>Max. 356 mm (14 inches)<br><br>Long document detection: 380 mm, or 1500 mm<br>* TF + 10 (To enable or disable the long document scanning) |
| | 3) Thickness | Based on common bond paper<br>a) 0.08 to 0.13 mm for multiple page feeding<br>b) 0.06 to 0.15 mm for single page feeding |
| | 4) Shape | Rectangular |
| | 5) Opacity | Documents allowing less than 40% of the scanner source light to pass through them. |

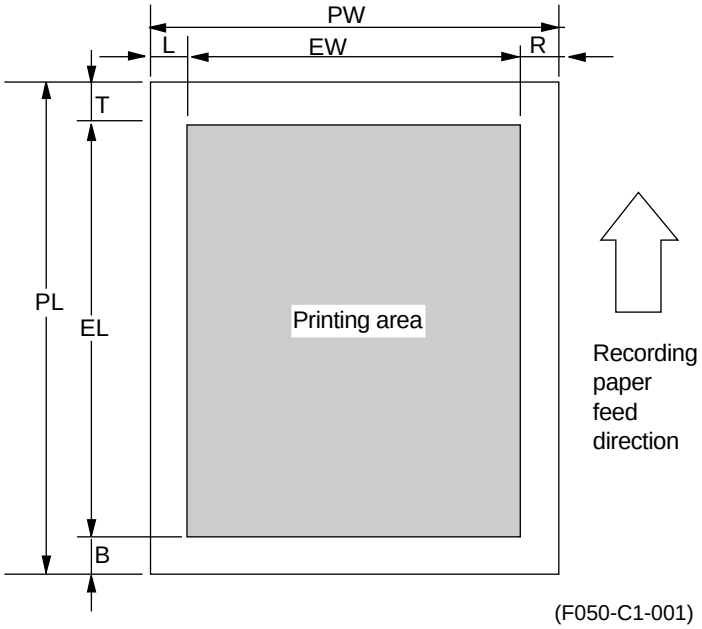
**Table 1.5.1 (2/10) Basic Performance Specifications**

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td>4</td><td>Effective reading width</td><td>
<table>
<tr><th>Document width</th><th>Communication Mode/Paper width</th><th>Effective reading width</th><th>Copy size</th></tr>
<tr><td>ISO A4 (210 mm) [INT'L/FTZ]</td><td>G3/A4</td><td>208 mm for TX<br>203.2 mm for local copy<br>(208 mm for local copy with Horizontal Reduction = ON)</td><td>A4</td></tr>
<tr><td>NA letter (216 mm) [US/CANADA]</td><td>G3/A4</td><td>215 mm for TX<br>203.2 mm for local copy<br>(214 mm for local copy with Horizontal Reduction = ON)</td><td>Letter</td></tr>
<tr><td>NA legal (216 mm) [US/CANADA]</td><td>G3/A4</td><td>215 mm for TX<br>203.2 mm for local copy<br>(214 mm for local copy with Horizontal Reduction = ON)</td><td>Legal</td></tr>
</table>
Note Local copy: Printable reading width in local copy mode
</td></tr>
<tr><td>5</td><td>Automatic document feeder (ADF)</td><td>Max. 20 documents for OKIOFFICE84/OKIFAX 4500: NA Letter or A4 (20-1b/75 gm)<br>Max. 15 documents: NA Letter or A4 (16-28 lb/60-105 gm bond paper)<br>Documents shall be placed facedown on ADF stacker.<br>The first sheet will be fed first in the feeder and will exit facedown in the document stacker.</td></tr>
<tr><td>6</td><td>Document skew</td><td>Max. 2.6 mm skew over a document of A4 length.<br>For a document longer than A4 length, occurrence of skew exceeding 2.6 mm over any A4 length is 0.5% or less. (Except 13 lb)</td></tr>
<tr><td>7</td><td>Document jam detection</td><td>1) Transmission will stop and line disconnection will occur when the end of a document is not detected within 356 mm after scanning begins (except for the long document scanning. TF + 10)<br><br>2) A jam will also be declared if the document does not reach the scanning position within 10 seconds after the start of a document feed.<br><br>Note: When a jam is detected during message transmission from the feeder, the machine will stop scanning and disconnect the line, but its receiving capability will remain valid.</td></tr>
<tr><td>8</td><td>Document jam removal</td><td>Manual release</td></tr>
</table>

**Table 1.5.1 (3/10) Basic Performance Specifications**

| No. | Item | Specifications |
|---|---|---|
| 9 | Recording paper or sheet | For tray-paper:<br>1) Type: Plain paper cut (Bond paper)<br>2) Size: ISO A4 (210 mm x 297 mm)<br>NA Letter (215.9 mm x 279.4 mm)/(8.5 inch x 11 inch)<br>NA Legal (215.9 mm x 355.6 mm)/(8.5 inch x 14 inch)<br>3) Weight: 16 lb-24 lb/60-90 gm base weight<br>Base weight is defined as the weight of 500 sheets of 431.8 mm (17 inch) by 558.8 mm (22 inch) or 1 sheet size 1000 mm by 1000 mm.<br>4) Thickness: 0.08 mm to 0.12 mm<br>5) Condition: New paper<br>For the manual loading feeder<br>1) Type: Plain paper, transparency for overhead projector, colored paper, printed paper<br>2) Size: A4/NA Letter/NA Legal<br>3) Weight, thickness and condition: Same as above<br>***Note:*** One single sheet should be loaded on the manual paper feeder for one occasion.<br>For best results use Oki Data recommended papers<br>1) Xerox 4200 (20 - lb/base weight paper)<br>2) L-type paper for photo-printers |
| 10 | Recording paper cassette | 100 sheets/tray (Oki Data recommended paper) |

**Table 1.5.1 (4/10) Basic Performance Specifications**

| No. | Item | Specifications |
|---|---|---|
| 11 | Effective recording area |  <br>(F050-C1-001) |

***Note:*** These tables do not include vertical and horizontal addressing deviations (+ or –3 mm) of recording paper.

1) Printable area

| | NA LETTER SIZE | | ISO A4 SIZE | | 14 inch LEGAL SIZE | | 13 inch LEGAL SIZE | |
|---|---|---|---|---|---|---|---|---|
| | inch | mm | inch | mm | inch | mm | inch | mm |
| PL | 11 | 279.4 | 11.7 | 297 | 14 | 355.6 | 13 | 330.2 |
| PW | 8.5 | 216 | 8.27 | 210 | 8.5 | 216 | 8.5 | 216 |
| EL | 10.76 | 273.4 | 11.46 | 291 | 13.76 | 349.6 | 12.76 | 324.2 |
| EW | 8.0 | 203.2 | 8.0 | 203.2 | 8.0 | 203.2 | 8.0 | 203.2 |
| T | 0.12 | 3 | 0.12 | 3 | 0.12 | 3 | 0.12 | 3 |
| B | 0.12 | 3 | 0.12 | 3 | 0.12 | 3 | 0.12 | 3 |
| L | 0.25 | 6.35 | 0.13 | 3.4 | 0.25 | 6.35 | 0.25 | 6.35 |
| R | 0.25 | 6.35 | 0.13 | 3.4 | 0.25 | 6.35 | 0.25 | 6.35 |

2) Guaranteed printing area

| | NA LETTER SIZE | | ISO A4 SIZE | | 14 inch LEGAL SIZE | | 13 inch LEGAL SIZE | |
|---|---|---|---|---|---|---|---|---|
| | inch | mm | inch | mm | inch | mm | inch | mm |
| PL | 11 | 279.4 | 11.7 | 297 | 14 | 355.6 | 13 | 330.2 |
| PW | 8.5 | 216 | 8.27 | 210 | 8.5 | 216 | 8.5 | 216 |
| EL | 10.5 | 266.7 | 11.2 | 284.3 | 13.5 | 342.9 | 12.5 | 317.5 |
| EW | 8.0 | 203.2 | 7.77 | 197.3 | 8.0 | 203.2 | 8.0 | 203.2 |
| T | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 |
| B | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 |
| L | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 |
| R | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 | 0.25 | 6.35 |

**Table 1.5.1 (5/10) Basic Performance Specifications**

| No. | Item | Specifications |
|---|---|---|
| 12 | Copy stacking | The fax can discharge printed copies and stack them faceup.<br>Maximum sheets on the copy stacker: 30*<br><br>***Note**:* Oki Data recommended paper |
| 13 | Scanning resolution | Horizontal:<br>• 300 dot/inch<br><br>Vertical:<br>Transmission mode:<br>• 3.85 line/mm (STD), 7.7 line/mm (FINE) or 15.4 line/mm (EX.FINE)<br>COPY mode:<br>• 3.85 line/mm, 7.7 line/mm, 15.4 line/mm or 300 dot/inch. |
| 14 | Image scanning method | NA Letter size (2592-bit) contact image sensor |
| 15 | Contrast control | 1) Automatic background sensing<br>A continuous document background of 0.3 OD (optical density) or less will be transmitted as white.<br><br>2) The LIGHT and DARK contrasts will automatically be adjusted to improve image quality. |
| 16 | Recording resolution | Horizontal:<br>• 300 dot/inch<br><br>Vertical:<br>• Fixed: 3.85 line/mm (STD), 7.7 line/mm (FINE), 15.4 line/mm (EX-FINE) 300 dot/inch (EX-FINE)<br><br>Variable: Automatically adjusted to the paper length.<br>• 300 to 412 dot/inch<br>• 3.85 to 5.06 line/mm (STD)<br>• 7.7 to 10.13 line/mm (FINE)<br>• 15.4 to 20.24 line/mm (EX. FINE) |
| 17 | Recording system | Electro-photographic printing<br>1) 211.3mm (2496 bit) or 216.7mm (2560 bit) LED print head |
| 18 | Skew of recording paper | Maximum allowable skew is + or - 1 mm over an advance of 100 mm. |
| 19 | Copy darkness | 1) Black image: Greater than 1.2 OD (Optical density)<br>2) White background: Not greater than 0.2 OD (Optical density) |
| 20 | Copy uniformity | Printed copies will exhibit a uniform density of the printed and background area:<br><br>1) From edge to edge: 25%<br>2) From copy to the next copy: 30% |
| 21 | Recording paper running out | The fax can detect the no-paper condition by a photosensor. When the paper has run out in the local copy operation, the scanning will stop with “PAPER OUT/JAM” on the LCD and an ALARM LED turns on without an alarm tone.<br>When the paper has run out while a message is being received and the no-paper reception is activated, the LCD display will show “MSG. IN MEMORY”, and the ALARM LED turns on. |

**Table 1.5.1 (7/10) Basic Performance Specifications**

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td>22</td><td>Minimum scan line time for receiving</td><td>0 ms, when receiving in ECM mode or from an Oki Data facsimile.<br>5 ms at 15.4 line/mm or 7.7 line/mm and 10 ms at 3.85 line/mm when receiving from a non-Oki Data facsimile or non-ECM mode.</td></tr>
<tr><td>23</td><td>Coding scheme</td><td>1) One-dimensional coding scheme:<br>Modified Huffman (MH)<br><br>2) Two-dimensional coding scheme:<br>Modified READ (MR)<br>Modified modified READ (MMR)</td></tr>
<tr><td>24</td><td>MODEM<br>1) High-speed Modem</td><td>a) ITU-T Rec. V.29 (9600/7200 bps)<br>b) ITU-T Rec. V.27 ter (4800/2400 bps)<br>c) ITU-T Rec. V.17 (14400/12000/9600/7200 bps)</td></tr>
<tr><td></td><td>2) Low-speed Modem</td><td>ITU-T Rec. V.21 channel 2 (300 bps)</td></tr>
<tr><td>25</td><td>Fallback</td><td>Automatic fallback will occur according to the following sequence by FTT, RTN or PPR.</td></tr>
<tr><td></td><td colspan="2"><table>
<tr><th>Fallback rank</th><th>Transmission speed</th><th>Activated by FTT (Times)</th><th>Activated by RTN (Times)</th><th>Activated by PPR (Times)</th><th>Protocol</th></tr>
<tr><td>1st</td><td>14400 bps</td><td>1</td><td>1</td><td>4 (Note 1)</td><td>ITU-T V.17 (V.17)</td></tr>
<tr><td>2nd</td><td>12000 bps</td><td>1</td><td>1</td><td>4 (Note 1)</td><td>ITU-T V.17 (V.17)</td></tr>
<tr><td>3rd</td><td>9600 bps</td><td>1</td><td>1</td><td>4 (Note 1)</td><td>ITU-T V.17 (V.29)</td></tr>
<tr><td>4th</td><td>7200 bps</td><td>1</td><td>1</td><td>4 (Note 1)</td><td>ITU-T V.17 (V.29)</td></tr>
<tr><td>5th</td><td>4800 bps</td><td>2</td><td>1</td><td>4 (Note 1)</td><td>ITU-T V.27 ter.</td></tr>
<tr><td>6th</td><td>2400 bps</td><td>2</td><td>1</td><td>4 (Note 1)</td><td>ITU-T V.27 ter.</td></tr>
</table></td></tr>
<tr><td></td><td></td><td>When the last trial fails, the transmitting station sends out a DCN signal to the remote station for disconnection.<br><br>Note 1: Continuous PPRs for the same partial page within each fallback rank.</td></tr>
<tr><td>26</td><td>Protocol</td><td>1) ITU-T Rec. T.30<br>2) Oki Data special protocol<br>High-speed protocol<br>The T.30 protocol signal from the transmitting station is sent at message transmission speed instead of 300 bps. (This function is disable when the H/Modem rate is set to 9.6 kbit/s by TS No.13)</td></tr>
</table>

**Table 1.5.1 (8/10) Basic Performance Specifications**

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td>27</td><td>Transmission time</td><td>6 sec.(approx 6.9 sec) /ITU-T No. 1 sample document<br><br>Note: This is Phase C time at 3.85 line/mm and 14400 bps for 6 sec. in MMR code transmission.</td></tr>
<tr><td>28</td><td>Error correction</td><td>ITU-T Error correction mode (ECM)</td></tr>
<tr><td>29</td><td>Communication mode</td><td>Half-duplex</td></tr>
<tr><td>30</td><td>Ringing signal detection sensitivity</td><td></td></tr>
<tr><td></td><td>1) Voltage range</td><td>25 to 150 V r.m.s.<br>Inoperative below 10 V<br><br>Note: This range may differ by the requirement of PTT.</td></tr>
<tr><td></td><td>2) Frequency range</td><td>20 to 68 Hz<br><br>Note: This range may differ by the requirement of PTT.</td></tr>
<tr><td></td><td>3) Ring response time</td><td>One-ringing signal or 5 to 30 seconds.<br>(Selectable in 5 sec. steps. F + OT9 + ← + 11)</td></tr>
<tr><td>31</td><td>Image memory</td><td><table><tr><th>Memory condition</th><th>[pages]</th></tr><tr><td>Standard (1M-byte)</td><td>80</td></tr></table><br>Note: ITU-T No.1 sample document is used to count the number of sheets. (MMR/STD/Sender ID : off)<br><br>Note: OKIOFFICE84/OKIFAX 4500 does not back up the message received in memory for the power failure.</td></tr>
<tr><td>34</td><td>Overheat protection</td><td>The heater of the fuser unit is controlled within the predetermined temperature range by the thermistor. If the temperature of the heater exceeds the range, the LCD displays “PRINTER ALARM 4”.<br><br>Furthermore, the built-in thermostat in the fuser unit prevents the heater from being overheated even in the event of the failures in the above temperature control circuit.</td></tr>
</table>

**Table 1.5.1 (9/10) Basic Performance Specifications**

<table>
<tr><th>No.</th><th>Item</th><th>Specifications</th></tr>
<tr><td>35</td><td>PC interface applications (Option)<br><br>Note: This function is the standard for OKI OFFICE84.</td><td>The following four modes are supported:<br>1) PC local printer function<br>2) PC scanner function<br>3) PC FaxModem function<br>4) Location Programing function<br><br>Note: This function will be supplied as the OKIFAX 4500 option in case Oki Data can get the approval in respective countries without modifying the optional unit.<br><br>For details, see product specification for MFP.</td></tr>
<tr><td>36</td><td>FAX2NET function (Option)</td><td>Each user's facsimile equipment can access the internet functions by communicating with the local FAX2NET server. The following four types are installed.<br>1) FAX over IP function<br>2) FAX to E-mail function<br>3) Virtual E-mail function<br>4) Web Retrieval function<br><br>For details, see Appendix I "FAX2NET Function".</td></tr>
<tr><td>37</td><td>Power supply unit and Power consumption of the machine</td><td>Power consumption of the machine<br>(Typical power)<br><table><tr><th></th><th>OKIOFFICE84</th><th>OKIFAX 4500</th></tr><tr><td>Transmit</td><td>17W</td><td>18W</td></tr><tr><td>Receive</td><td>425W</td><td>402W</td></tr><tr><td>Local copy</td><td>428W</td><td>405W</td></tr><tr><td>Standby<br>(Power Save OFF)</td><td>5.4W</td><td>6.5W</td></tr><tr><td>Standby<br>(Power Save ON)</td><td>*</td><td>0.35W</td></tr></table>* Since the PC interface is standard in OKIOFFICE 84, it has no power save mode.</td></tr>
<tr><td>38</td><td>Ambient condition<br><br>1) Operating condition<br><br>2) Storage condition</td><td><br><br>See Figure 1.5.1<br><br>See Figure 1.5.1</td></tr>
</table>

**Table 1.5.1 (10/10) Basic Performance Specifications**

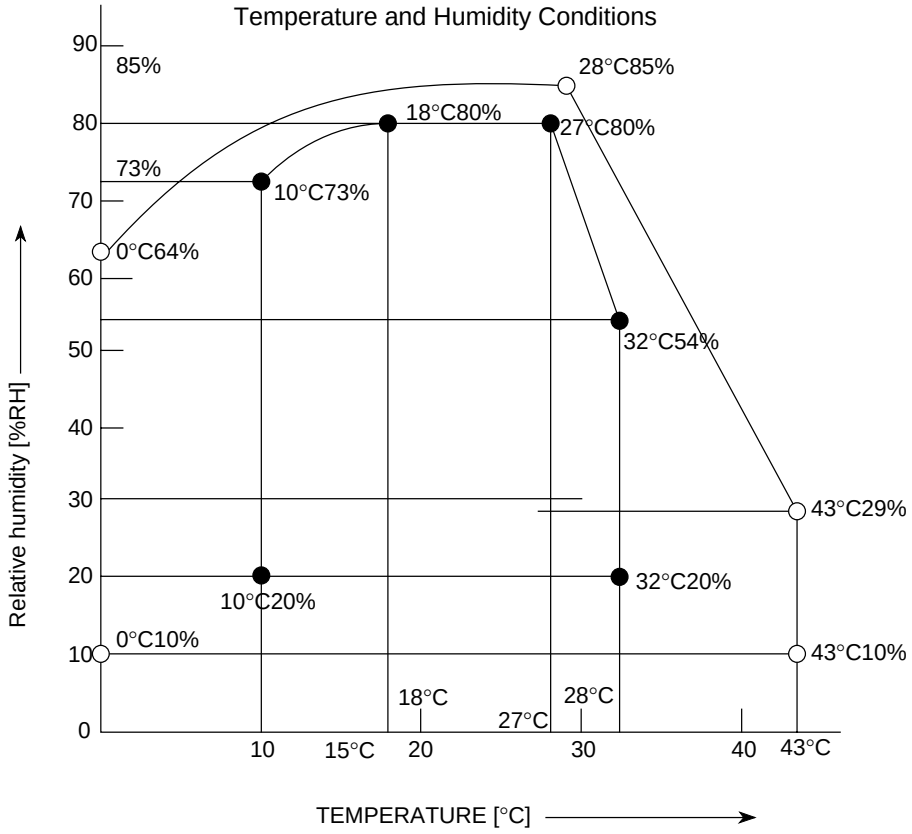
| No. | Item | Specifications |
|---|---|---|
| | |  <br>Area enclosed by lines with ● : Range where printing is guaranteed.<br>Area enclosed by lines with ○ : Range for storage without power supply.<br>(Note) The curve connecting 28°C, 85% and 0°C, 64% is the condensation curve. |
| 39 | Dimension<br>(Main body) | 1) Width: Approx. 316 mm<br>2) Depth: Approx. 383 mm<br>3) Height: Approx. 190 mm |
| 40 | Weight<br>(Main body) | Approx. 8 kg<br>Excluding recording paper and packing materials. |
| 41 | Attachment<br>(to the main body) | 1) AC power cord x 1<br>2) I/D unit x 1 (Already installed)<br>3) Toner cartridge x 1<br>4) Telephone cord for (4)<br>5) Document stacker x 1<br>6) Line cord x 1<br>7) One touch sheet x 1 (Already installed)<br>8) User's guide x 1 |

**Figure 1.5.1 Ambient Conditions**

## 1.6 Reports and Lists

Table 1.6.1 shows Reports and Lists Specifications.
The described information for FAX2NET service referes to Appendix I "7. Report".

**Note:** F +OT: Press FUNCTION and One-touch key
FP: Function program setting
TF: Technical function setting

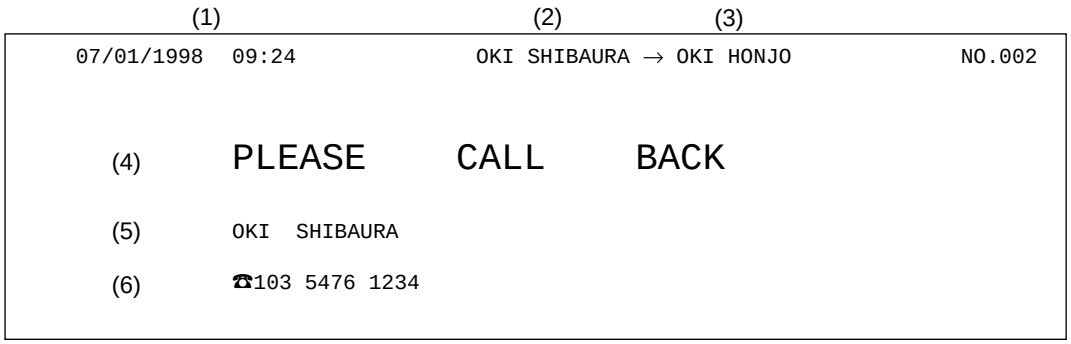
**Table 1.6.1 (1/2) Reports and Lists Specifications**

| No. | Item | Specifications |
|---|---|---|
| 1 | Call-back message | The transmitter sends a call-back message to the receiver only when the receiver does not respond to voice request of the transmitter. |
| 2 | Sender ID | The fax can transmit a programmed alphanumeric message, such as company's name, consisting of up to 32 characters.<br><br>* (Outside only) |
| 3 | Transmitting subscriber identification(TSI) printing | Received TSI can be printed at the top of the received page.<br>* TF + 05 (To enable or disable this function) |
| 4 | Cancel report<br>(Power outage report) | The fax will automatically print out a power outage report when the AC power is restored after the power fuilure. |
| 5 | Activity report | The fax can print out an activity report manually, and provides a record of your fax machine's last 30 communications. This report does not contain the results of messages which were received without errors. However it does contain messages received in memory with or without errors.<br>* REPORT PRINTOUT+1(Manual printout) |
| 6 | Message confirmation report | The fax can print out a message confirmation report manually or automatically in the following cases.<br>(1) Manual print<br>By pressing the COPY key after a communication<br><br>(2) Automatic printout<br>When the FP+01 (to enable or disable automatic printing after a communication) is set to Enable. |
| 7 | Broadcast entry report | The fax can print out a broadcast entry report if specified during operating sequence of a broadcast. |
| 8 | Broadcast confirmation report | The fax can print out a broadcast confirmation report manually or automatically.<br>* COPY key (Manual printout): Pressed after a broadcast.<br><br>* REPORT PRINTOUT + 2 (Manual printout)<br>* FP +02 (To enable or disable automatic printing) |

**Table 1.6.1 (2/2) Reports and Lists Specifications**

| No. | Item | Specifications |
|---|---|---|
| 9 | Confidential reception report | The fax can print out this report automatically on completion of a confidential reception. |
| 10 | Memory files report | Printing the list of received but not printed yet documents and waiting documents for transmission stored in the memory.<br>* REPORT PRINTOUT + 3 (Manual printout) |
| 11 | Telephone directory | This directory is printed manually.<br>(REPORT PRINTING + 4) |
| 12 | Configuration report | This report is printed manually.<br>(REPORT PRINTING + 5) |
| 13 | Protocol dump report | This report is printed manually.<br>(REPORT PRINTING + 6) |

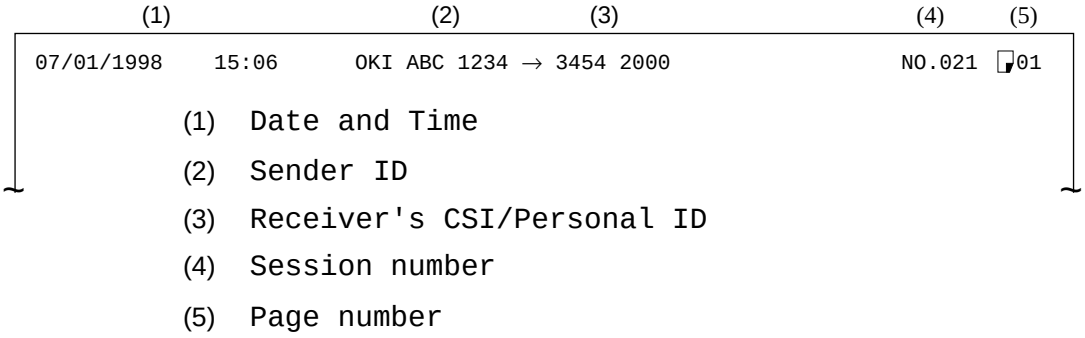
**Call-back Message Format: (Example)**




(F051-C1-002)

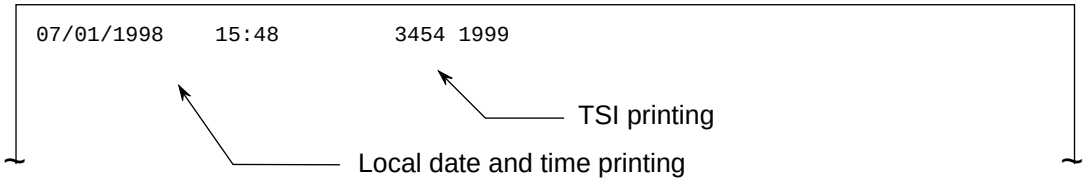
(1) Date and time
(2) Sender ID
(3) CSI/Personal ID
(4) Letters "PLEASE CALL BACK"
(5) Sender ID
(6) Sender's call back telephone number

**Sender ID Format: (Example)**




(F051-C1-003)

**TSI Printing and Local Date and Time Printing Format: (Example)**




(F051-C1-004)

Note: TSI printing (TF+05)
Local date and time printing (TF+04)

**Power outage Report Format: (Example)**

# POWER OUTAGE REPORT

07/01/1998 17:05
ID=OKI

| DATE | TIME | S,R-TIME | DISTANT STATION ID | MODE | PAGES | RESULT | |
|---|---|---|---|---|---|---|---|
| 06/30 | 10:10 | | 0485-88-3385 | | | LOST | 9080 |
| 06/30 | 10:30 | | ODS TAKASAKI | | 03 | LOST | 0000 |
| 06/30 | 12:05 | 01’20" | OKI FAX | CONF=01 | 03 | LOST | 0000 |
| 06/30 | 13:00 | 00’20" | 03-5476-4300 | CALLED | 01 | LOST | 0000 |
| 06/30 | 10:50 | 01’20" | 0495-22-5400 | CALLED | 03 | LOST | 0000 |
| 06/30 | 15:00 | | | B.C. | 01 | LOST | |

**Note: Memory receptin only is printed on the mode in the report as called.**

**Activity Report Format: (Example)**

# (1) ACTIVITY REPORT

(2) 07/01/1998 17:05
(3) ID=OKI

(4) TOTAL TIME CALLING=08:22' CALLED=17:30'

| DATE (5) | TIME (6) | S,R-TIME (7) | DISTANT STATION ID (8) | MODE (9) | PAGES (10) | RESULT (11) | (12) |
|---|---|---|---|---|---|---|---|
| 06/29 | 10:00 | 01’20" | OKI FAX | CALLING | 02 | OK | 0000 |
| 06/29 | 10:10 | 01’00" | 0485 88 3385 | CALLING | 00 | STOP | 9080 |
| 06/29 | 10:30 | 00’20" | ODS TAKASAKI | CALLING | 00 | NO | 90C1 |
| 06/29 | 12:05 | 01’20" | OKI FAX | CALLING | 03 | OK | 0000 |
| 06/29 | 13:00 | 00’20" | 03 5476 4300 | CALLING | 01 | OK | 0000 |
| 06/29 | 15:40 | 03’25" | ODS TAKASAKI | CONF=02 | 03 | OK | 0000 *1 |
| 06/29 | 19:00 | 00’00" | OKI FAX | | 01 | OK | 0000 *2 |
| 06/30 | 10:10 | 02’00" | OKI SHIBAURA | CALLED | 05 | NO | 908E |
| 06/30 | 10:22 | 00’12" | 0495 22 5400 | CALLING | 00 | STOP | 9080 |
| 06/30 | 10:50 | 01’20" | 0495 22 5400 | CALLED | 03 | NO | 9090 |
| 06/30 | 12:05 | 00’20" | OKI FAX | CALLING | 01 | STOP | 9080 |
| 06/30 | 15:00 | 01’30" | | CALLED | 03 | OK | 0000 *3 |
| 06/30 | 15:30 | 00’20" | | CALLING | 01 | OK | 0000 |
| 06/30 | 17:05 | 05’20" | | B.C. | | COMP. | 60A0 *4 |
| 06/30 | 19:04 | 00’20" | 03 5476 4300 | CALLING | 00 | STOP | 9080 |
| 07/01 | 09:00 | 01’11" | | CALLING | 02 | OK | 0000 |
| 07/01 | 10:20 | 00’20" | 03 5476 4300 | CALLING | 02 | STOP | 9080 |
| 07/01 | 10:35 | 02’23" | | CONF=03 | 02 | OK | 0000 *1 |
| 07/01 | 10:50 | 00’20" | ODS TAKASAKI | CALLED | 01 | OK | 0000 |
| 07/01 | 11:03 | 00’00" | OKI FAX | CALLING | 00 | STOP | 9080 |
| 07/01 | 13:00 | 00’24" | 03 5476 4300 | | 01 | NO | 9082 *5 |
| 07/01 | 16:00 | 01’20" | 027 324 2117 | POLL=01 | 01 | OK | 0000 *6 |
| 07/01 | 16:10 | 00’40" | ODS | POLLED | 01 | OK | 0000 *7 |

*1 : Confidential reception
*2 : Manual TX
*3 : Memory reception
*4 : Broadcast TX
*5 : Manual reception
*6 : Bulletin TX wait state
*7 : Memory/Feeder polling TX wait state

(1) Title of the report
(2) Date and time when the report was printed
(3) Sender ID
(4) Total CALLING and CALLED time
(5) Date of transmission or reception
(6) Time when the communication started
(7) Time span of the fax communication.
(8) Identification of the remote station
Personal ID/Location ID/TSI/CSI/Dial number or space
(9) Communication mode:
CALLING (Transmission)
CALLED (Reception NG or MEMORY RX)
B. C. (Broadcast)
BOX=XX (Confidential reception)
POLLED (polling TX) in case of country code = except GER, AUT, SUI
POLLING (polling RX) in case of country code = except GER, AUT, SUI
POLL=XX (Bulletin TX) in case of country code = except GER, AUT, SUI
OUTGOING (Manual TX, polling TX, Bolletin TX) in case of country code=GER, AUT, SUI
INCOMING (Manual RX) in case of country code=GER, AUT, SUI
(10) Number of transmitted pages or received pages
(11) Result code
OK (Note1)/NO/STOP (Note 2)/BUSY/PAPER (Out of recording paper)/S_JAM (Document jam)/R_JAM (Recording paper jam)/COVER/COMP (Completion of a broadcast)/ PUNIT (Printer Alarm)/CANCL (Confidential reception T.O.)

***Note 1:*** The following cases are included:
- Unmatched handshaking to the received NSF.
- Unmatched password to the received NSC in the polling transmission mode.

***Note 2:*** The following cases are included:
- The STOP key is pressed.
- The memory cancellation operation removes the message from the active memory files.

(12) Service code

# ACTIVE MEMORY FILES

07/01/1998 17:05
ID=ODC

(1)
RECEPTION

| ENTRIES | PAGES |
|---|---|
| 05 | 20 |

(2)
PERSONAL BOX

| BOX NO. | MODE | ENTRIES | PAGES |
|---|---|---|---|
| 01 | CONF | 03 | 20 |
| 02 | CONF | 01 | 02 |
| 05 | POLL | 01 | 05 |

(3)
POLLING TX/RX

| DATE | TIME | DISTANT STATION ID | MODE | PAGES |
|---|---|---|---|---|
| | | | POLLED | 03 |
| 03/19 | 12:05 | OKI | POLLING | |

(4)
TRANSMISSION

| DATE | TIME | DIDTANT STATION ID | MODE | PAGES |
|---|---|---|---|---|
| 03/20 | 20:00 | OKI DATA SYSTEMS | CALLING | 03 |
| 03/19 | 12:03 | 0273242117 | CALLING | 01 |
| 03/19 | 19:00 | ODC TAKASAKI | CALLING | 02 |

(1) RECEPTION (Memory reception)
- Prints the information of no paper/no toner reception.
- ENTRIES is the number of received communication times stored in the memory.
- PAGES is the number of total pages of the reception messages stored in the memory.

(2) PERSONAL BOX (Confidential, Bulletin Poll)
- Prints the opened condition of Personal Box.
- MODE shows the type of Box.
- ENTRIES prints the number of receipt times stored in the memory.
- PAGES prints the number of total pages of each Box.

(3) POLLING TX/RX
- Prints the information of Polling RX or Polling TX of unused Box.
- POLLING TX prints MODE column and number of read pages.
  When Feeder Polling TX, the number of read pages is a blank.
- POLLING RX prints the communication data and time, distant station ID and MODE.

(4) TRANSMISSION (Delayed transmission, Standby of redial)
- Prints the information of Delay memory transmission and Redial.
  However, Polling RX information is printed out on the above item 3.
- Prints the communication date and time, distant station ID and Mode.

OTHERS

- When there is no stored image data in the memory at all, this Active Memory Files is not printed out.

**Message Confirmation Report Format (1/2): (Example)**

(1) MESSAGE CONFIRMATION

(2) 07/01/1998 08:05
(3) ID=OKI

| (4) DATE | (5) S.R-TIME | (6) DISTANT STATION ID | (7) MODE | (8) PAGES | (9) RESULT | (10) |
|---|---|---|---|---|---|---|
| 07/01 | 00'20" | OKI FAX | CALLING | 02 | OK | 0000 |

(F051-C1-008 1/2)

**Message Confirmation Report Format (2/2): (Example)**

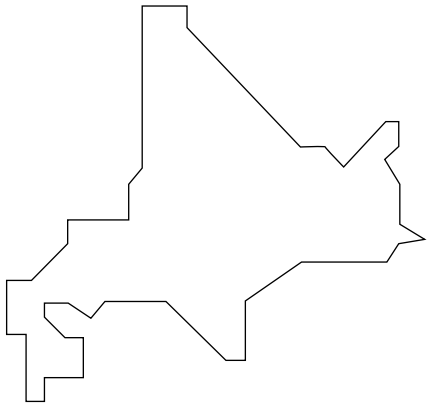
(1) MESSAGE CONFIRMATION

(2) 07/01/1998 17:05
(3) ID=OKI

| (4) DATE | (5) S.R-TIME | (6) DISTANT STATION ID | (7) MODE | (8) PAGES | (9) RESULT | (10) |
|---|---|---|---|---|---|---|
| 07/01 | 00'20" | OKI FAX | B.C. | 01 | COMP | 60A0 |

150 km

(11)



(F050-C1-008 2/2)

(1) Title of the report
(2) Date and time when the report was printed
(3) Sender ID
(4) Date of transmission or reception
(5) Length of time for which the fax was connected to the line
(6) Identification of the remote station
Personal ID/Location ID/TSI/CSI/Dial number
(7) Communication mode
Reference to ACTIVITY REPORT
(8) Number of transmitted pages or received pages
(9) Result of the communication
Reference to ACTIVITY REPORT
(10) Service code
(11) Message

**Broadcast Entry Report Format: (Example)**

# BROADCAST ENTRY REPORT

07/01/1998 17:05
ID=OKI

| LOCATION ID | LOCATION ID | LOCATION ID |
|---|---|---|
| ONE TOUCH | | |
| 1 = OT1 | 2 = OT2 | 3 = OT3 |
| 4 = OT4 | 5 = OT5 | 6 = OT6 |
| 7 = OT7 | 8 = OT8 | 9 = OT9 |
| 10 = OT10 | | |
| AUTO DIAL | | |
| 01 = AD1 | 02 = AD2 | 03 = AD3 |
| 04 = AD4 | 05 = AD5 | 06 = AD6 |
| 07 = AD7 | 08 = AD8 | 09 = AD9 |
| 10 = AD10 | 11 = AD11 | 12 = AD12 |
| 13 = AD13 | 14 = AD14 | 15 = AD15 |
| 16 = AD16 | 17 = AD17 | 18 = AD18 |
| 19 = AD19 | 20 = AD20 | 21 = AD21 |
| 22 = AD22 | 23 = AD23 | 24 = AD24 |
| 25 = AD25 | 26 = AD26 | 27 = AD27 |
| 28 = AD28 | 29 = AD29 | 30 = AD30 |
| 31 = 31 | 32 = 32 | 33 = 33 |
| 34 = 34 | 35 = 35 | 36 = 36 |
| 37 = 37 | 38 = 38 | 39 = 39 |
| 40 = 40 | 41 = 41 | 42 = 42 |
| 43 = 43 | 44 = 44 | 45 = 45 |
| 46 = 46 | 47 = 47 | 48 = 48 |
| 49 = 49 | 50 = 50 | 51 = 51 |
| 52 = 52 | 53 = 53 | 54 = 54 |
| 55 = 55 | 56 = 56 | 57 = 57 |
| 58 = 58 | 59 = 59 | 60 = 60 |
| 61 = 61 | 62 = 62 | 63 = 63 |
| 64 = 64 | 65 = 65 | 66 = 66 |
| 67 = 67 | 68 = 68 | 69 = 69 |
| 70 = 70 | | |

KEYPAD *1
1234
2345
3456
4567

*1 MAX.10 Locations

**Broadcast Confirmation Report Format: (Example)**

# BROADCAST CONFIRMATION REPORT

07/01/1998 17:05
ID=OKI

PAGES = 01
START TIME = 07/01 17:02
TOTAL TIME = 00:02’30"

| | LOCATION ID | PAGES | RESULT | | LOCATION ID | PAGES | RESULT |
|---|---|---|---|---|---|---|---|
| ONE TOUCH | | | | | | | |
| 1 = | HEAD OFFICE | 01 | OK | 2 = | OT2 | 01 | OK |
| 3 = | OT3 | 01 | OK | 4 = | OT4 | 01 | OK |
| 5 = | OT5 | 01 | OK | | | | |
| AUTO DIAL | | | | | | | |
| 01 = | AD1 | 01 | OK | 02 = | AD2 | 01 | OK |
| 03 = | AD3 | 01 | OK | 04 = | GERMAN | 01 | OK |
| 05 = | AD5 | 01 | OK | | | | |
| KEYPAD | | | | | | | |
| | 1234 | 01 | OK | | | | |
| | 3456 | 01 | OK | | | | |
| | 5678 | 01 | OK | | | | |

*1: Identification of remote station
Personal ID, TSI, Location ID or Dial number
(Printing in this order depending if information is programed in remote fax machine)

**Confidential Reception Report Format: (Example)**

# CONFIDENTIAL RX REPORT

07/01/1998 17:05
ID=OKI

| DATE | TIME | S,R-TIME | DISTANT STATION ID | MODE | PAGES | RESULT | |
|---|---|---|---|---|---|---|---|
| 07/01 | 13:00 | 00'20" | OKI FAX*2 | BOX=01 | 02 | OK | 0000 |

*2: Identification of remote station
Personal ID or CSI

**Telephone Directory (1/3): (Example)**

# TELEPHONE DIRECTORY P1

07/01/1998 17:05
ID=OKI

| | LOCATION ID | | | TEL NO. | PRM. ECHO | RETE |
|---|---|---|---|---|---|---|
| ONE TOUCH | | | | | | |
| 1 | OT1 | OKI OFFICE | 0001 | 123 123 123 | (ON) | (14.4) |
| | | | OR 0101 | 111 222 333 | | |
| 2 | OT2 | OKI LABORATORY | 0002 | 456 456 456 | (OFF) | (14.4) |
| | | | OR 0102 | 444 555 666 | | |
| 3 | OT3 | ODC TAKASAKI | 0003 | 789 789 789 | (ON) | (14.4) |
| | | | OR 0103 | 777 888 999 | | |
| 4 | OT4 | ODC QA/QC LAB. | 0004 | 1234 5678 90123 | (ON) | (14.4) |
| | | | OR 0104 | | | |
| 5 | OT5 | | 0005 | | (ON) | (14.4) |
| | | | OR 0105 | | | |
| 6 | OT6 | | 0006 | | (ON) | (14.4) |
| | | | OR 0106 | | | |
| 7 | OT7 | | 0007 | | (ON) | (14.4) |
| | | | OR 0107 | | | |
| 8 | OT8 | | 0008 | | (ON) | (14.4) |
| | | | OR 0108 | | | |
| 9 | OT9 | | 0009 | | (ON) | (14.4) |
| | | | OR 0109 | | | |
| 10 | OT10 | | 0010 | | (ON) | (14.4) |
| | | | OR 0110 | | | |
| AUTO DIAL | | | | | | |
| 01 | AD01 | | 1001 | | | |
| 02 | AD02 | | 1002 | | | |
| 03 | AD03 | | 1003 | | | |
| 04 | AD04 | | 1004 | | | |
| 05 | AD05 | | 1005 | | | |
| 06 | AD06 | | 1006 | | | |
| 07 | AD07 | ODC TAKASAKI | 1007 | 0273 28 1234 | | |
| 08 | AD08 | | 1008 | | | |
| 09 | AD09 | | 1009 | | | |
| 10 | AD10 | | 1010 | | | |
| 11 | AD11 | | 1011 | | | |
| 12 | AD12 | | 1012 | | | |
| 13 | AD13 | | 1013 | | | |
| 14 | AD14 | | 1014 | | | |
| 15 | AD15 | | 1015 | | | |
| 16 | AD16 | | 1016 | | | |
| 17 | AD17 | | 1017 | | | |
| 18 | AD18 | | 1018 | | | |
| 19 | AD19 | | 1019 | | | |
| 20 | AD20 | | 1020 | | | |
| 21 | AD21 | | 1021 | | | |
| 22 | AD22 | | 1022 | | | |
| 23 | AD23 | | 1023 | | | |
| 24 | AD24 | | 1024 | | | |
| 25 | AD25 | | 1025 | | | |
| 26 | AD26 | | 1026 | | | |
| 27 | AD27 | | 1027 | | | |
| 28 | AD28 | | 1028 | | | |
| 29 | AD29 | | 1029 | | | |
| 30 | AD30 | | 1030 | | | |
| 31 | AD31 | | 1031 | | | |
| 32 | AD32 | | 1032 | | | |
| 33 | AD33 | | 1033 | | | |
| 34 | AD34 | | 1034 | | | |
| 35 | AD35 | | 1035 | | | |
| 36 | AD36 | | 1036 | | | |
| 37 | AD37 | | 1037 | | | |
| 38 | AD38 | | 1038 | | | |
| 39 | AD39 | | 1039 | | | |
| 40 | AD40 | | 1040 | | | |
| 41 | AD41 | | 1041 | | | |
| 42 | AD42 | | 1042 | | | |
| 43 | AD43 | | 1043 | | | |

**Telephone Directory (2/3): (Example)**

# TELEPHONE DIRECTORY P2

07/01/1998 17:05
ID=OKI

| AUTO DIAL | LOCATION ID | TEL NO. |
|---|---|---|
| 44 | AD44 | 1044 |
| 45 | AD45 | 1045 |
| 46 | AD46 | 1046 |
| 47 | AD47 | 1047 |
| 48 | AD48 | 1048 |
| 49 | AD49 | 1049 |
| 50 | AD50 | 1050 |
| 51 | AD51 | 1051 |
| 52 | AD52 | 1052 |
| 53 | AD53 | 1053 |
| 54 | AD54 | 1054 |
| 55 | AD55 | 1055 |
| 56 | AD56 | 1056 |
| 57 | AD57 | 1057 |
| 58 | AD58 | 1058 |
| 59 | AD59 | 1059 |
| 60 | AD60 | 1060 |
| 61 | AD61 | 1061 |
| 62 | AD62 | 1062 |
| 63 | AD63 | 1063 |
| 64 | AD64 | 1064 |
| 65 | AD65 | 1065 |
| 66 | AD66 | 1066 |
| 67 | AD67 | 1067 |
| 68 | AD68 | 1068 |
| 69 | AD69 | 1069 |
| 70 | AD70 | 1070 |

**Telephone Directory (3/3): (Example)**

# TELEPHONE DIRECTORY P3

07/01/1998 17:05
ID=OKI

```
GROUP_NUMBER_=_#1_#2_#3_#4_#5

  #1_ONE_TOUCH
        1  2  3  4  5  6  7  8  9 10

     AUTO DIAL
         01 02 03 04 05 06 07 •••••••
         26 27 28 29 30 31 32 •••••••

  #2_ONE_TOUCH


     AUTO DIAL


  #3_ONE_TOUCH


     AUTO DIAL


  #4_ONE_TOUCH


     AUTO DIAL


  #5_ONE_TOUCH


     AUTO DIAL
```

**Configuration Report (User)**

# CONFIGURATION

07/01/1998 17:05
ID=OKI

FUNCTION LIST

| | | |
|---|---|---|
| 01:MCF (SINGLE-LOC.)<br>ON | 02:MCF (MULTI-LOC.)<br>ON | 03:ERR.REPORT (MCF)<br>ON |
| 04:IMAGE IN MCF<br>ON | 05:SENDER ID.<br>ON | 06:MONITOR VOLUME<br>LOW |
| 07:BUZZER VOLUME<br>MIDDLE | 08:CLOSED NETWORK<br>OFF | 09:TX MODE DEFAULT<br>FINE/NORMAL |
| 10:T/F TIMER PRG.<br>35SEC | 11:RING RESPONSE<br>1RING | 12:DISTINCTIVE RING<br>OFF |
| 13:1'ST PAPER SIZE<br>A4 | 14:USER LANGUAGE<br>ENGLISH | 15:INCOMING RING<br>ON |
| 16:REMOTE RECEIVE<br>OFF | 17:MEM./FEEDER SWITCH<br>MEMORY | 18:POWER SAVE MODE<br>ON |
| 19:ECM FUNCTION<br>ON | 20:REMOTE DIAGNOSIS<br>OFF | 21:PC/FAX SWITCH*1<br>ON |
| 22:NO TONER MEM.RX<br>OFF | 23:MEM.FULL SAVE<br>OFF | 24:CONTINUOUS TONE<br>OFF |
| 25:INSTANT DIALING<br>ON | 26:RESTRICT ACCESS<br>OFF | 27:WIDTH REDUCTION<br>OFF |

TEL NO. = 12345678901234567890
CALL BACK NO. = 12345678901234567890

| | | | |
|---|---|---|---|
| REDIAL TRIES | 3TRY | REDIAL INTERVAL | 3MIN |
| DIAL TONE DETECT | OFF | BUSY TONE DETECT | ON |
| MF(TONE)/DP(PULSE) | MF | PULSE DIAL RATE | 10PPS |
| PALUSE MAKE RATIO | 39% | PULSE DIAL TYPE | NORMAL |
| MF (TONE) DURATION | 100MS | PBX LINE | OFF |
| PBX TYPE | NORMAL | AUTO START | ON |
| DIAL PREFIX | OFF | | |

*1 Function 21 is printed out when the MFP Operation ON/OFF setting is set to ON from HOST to MFP.

**Service Default Report (Configuration Report: Service bit=ON)**

# CONFIGURATION

07/01/1998 17:05
ID=OKI

FUNCTION LIST

| | | |
|---|---|---|
| 01:SERVICE BIT<br>ON | 02:MONITOR CONT.<br>OFF | 03:COUNTRY CODE<br>USA |
| 04:TIME/DATE PRINT<br>OFF | 05:TSI PRINT<br>ON | 06:TAD MODE<br>TYPE2 |
| 07:REAL TIME DIAL<br>TYPE2 | 08:TEL/FAX SWITCH<br>ON | 09:MDY/DMY.<br>MDY |
| 10:LONG DOC. SCAN<br>OFF | 11:TONE FOR ECHO<br>OFF | 12:MH ONLY<br>OFF |
| 13:H/MODEM RATE<br>14.4K | 14:T1 (TX) TIMER VALUE<br>059 | 15:T1 (RX) TIMER VALUE<br>035 |
| 16:T2 TIMER VALUE<br>060 | 17:DIS BIT32<br>ON | 18:ERR. CRITERION VALUE<br>10 |
| 19:OFF HOOK BYPASS<br>OFF | 20:NL EQUALIZER<br>0kM | 21:ATTENUATOR<br>10DB |
| 22:T/F TONE ATT.<br>10DB | 23:MF ATT.<br>6DB | 24:RING DURA. * 10MS<br>12 |
| 25:CML TIMING * 100MS<br>03 | 26:LED HEAD STROBE<br>10100 | 27:LED HEAD WIDTH<br>TYPE1 |
| 28:MEDIA TYPE<br>MEDIUM | 29:TR LATCH CURRENT<br>+1 | 30:NSF SWITCH<br>OFF |
| 31:ID/TSI PRIORITY<br>ID | 32:TONER COUNT CLEAR<br>OFF | 33:PARALLEL PICK UP<br>ON |

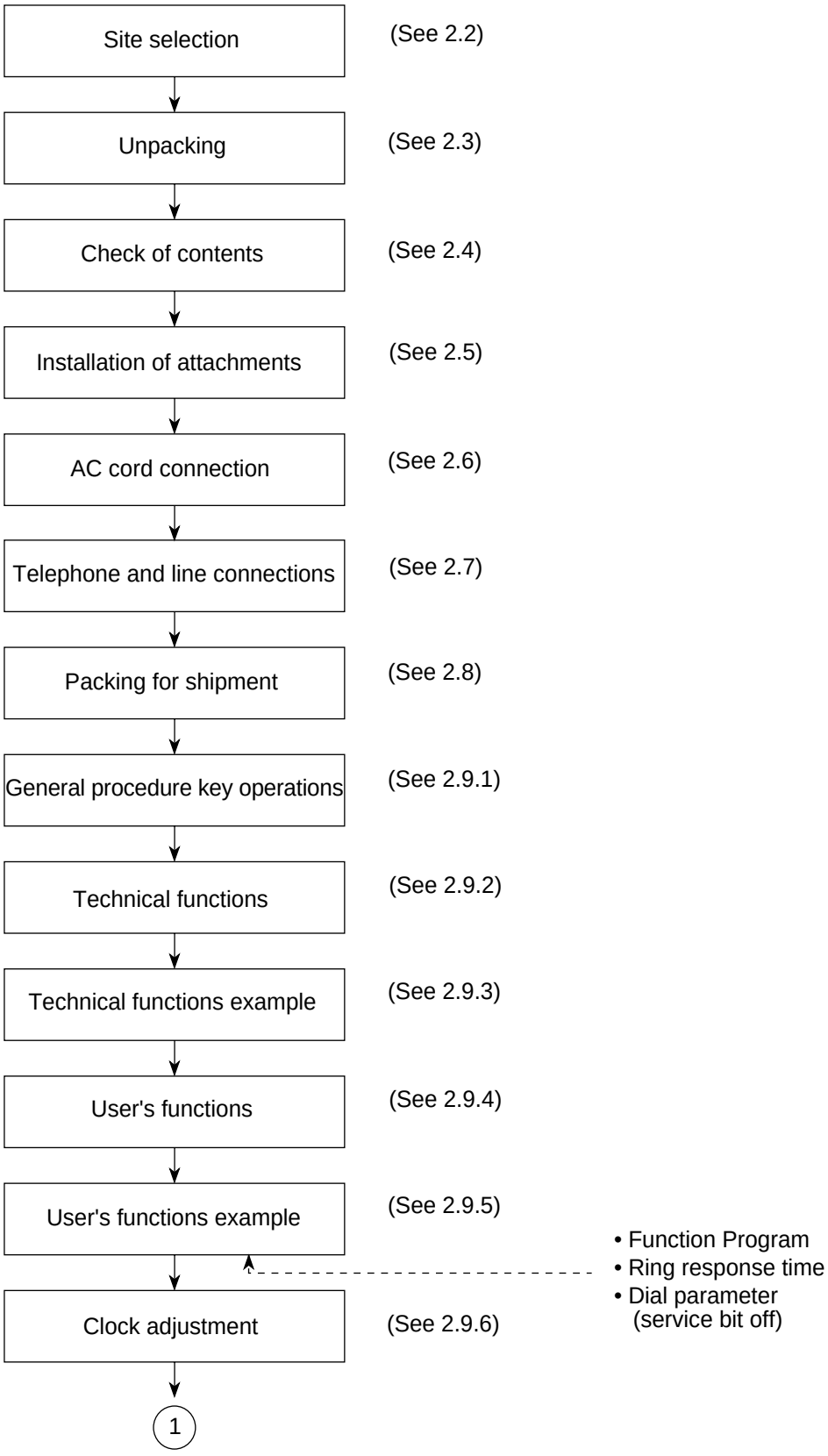
# *CHAPTER 2*

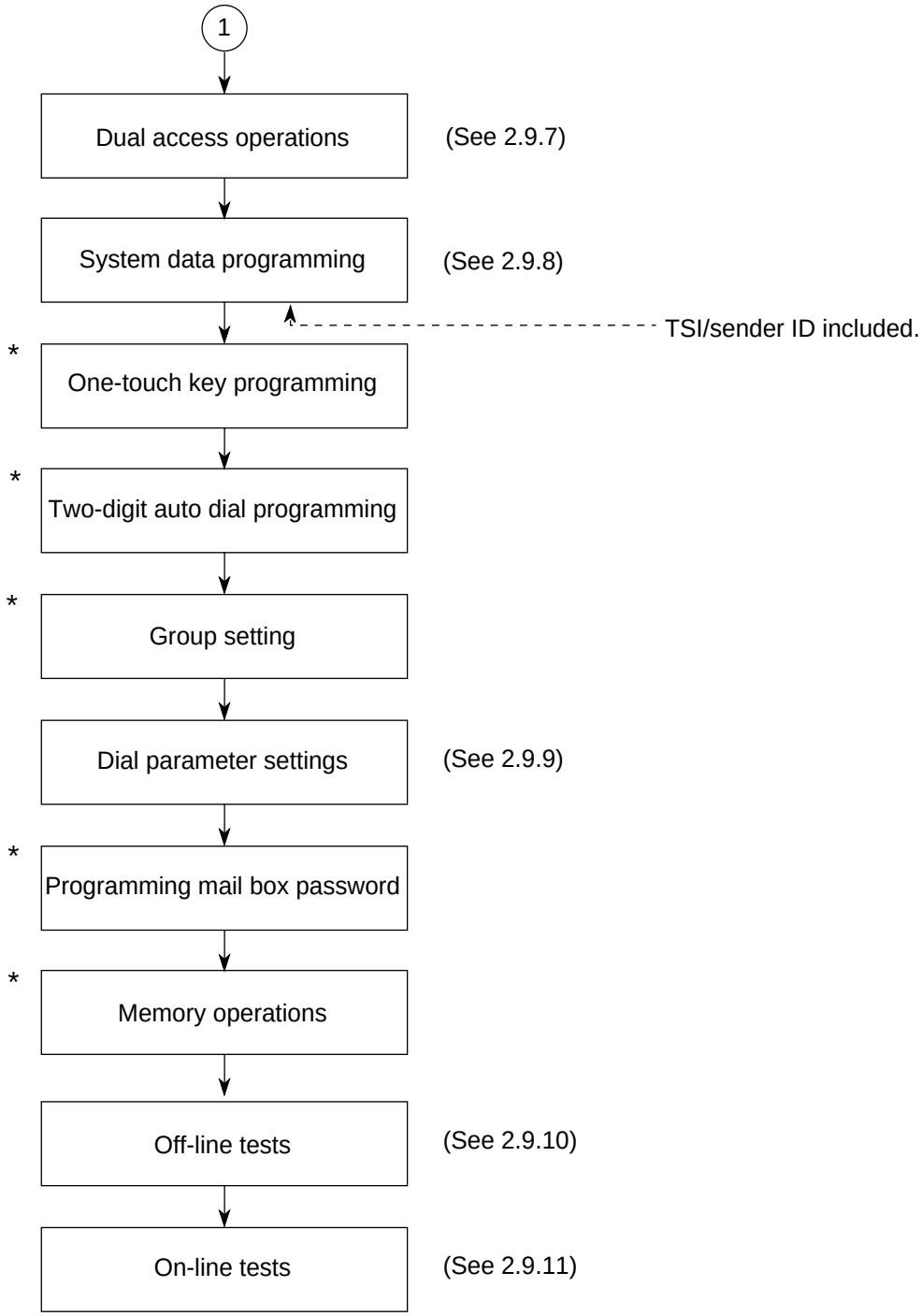
# *INSTALLATION PROCEDURE*

# A. Setup Information

## 2.1 General

The following flowchart outlines the installation procedure.






* : See user's guide

## 2.2 Site Selection

INSTALLATION

Precautions for Installation

(1) Fluctuation in line voltage
- 120VAC (102V to 127V)
- 230VAC (198V to 264V)

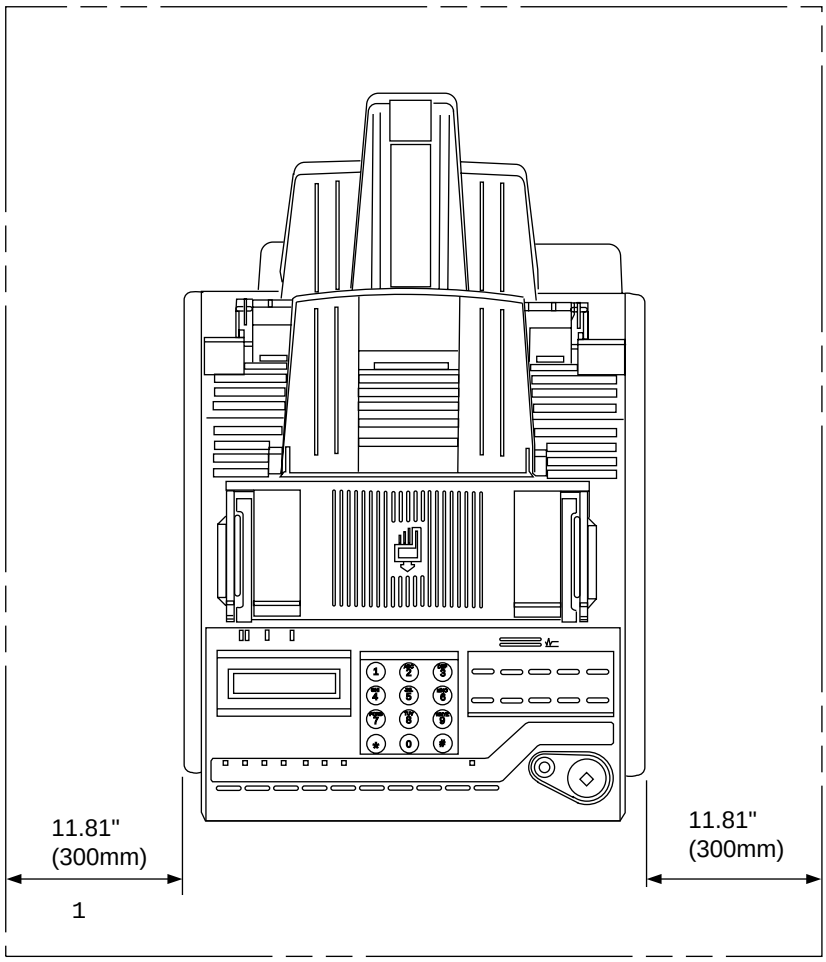
(2) Room temperature
50 to 90°F (10 to 32°C)

(3) Humidity
20 to 80% RH

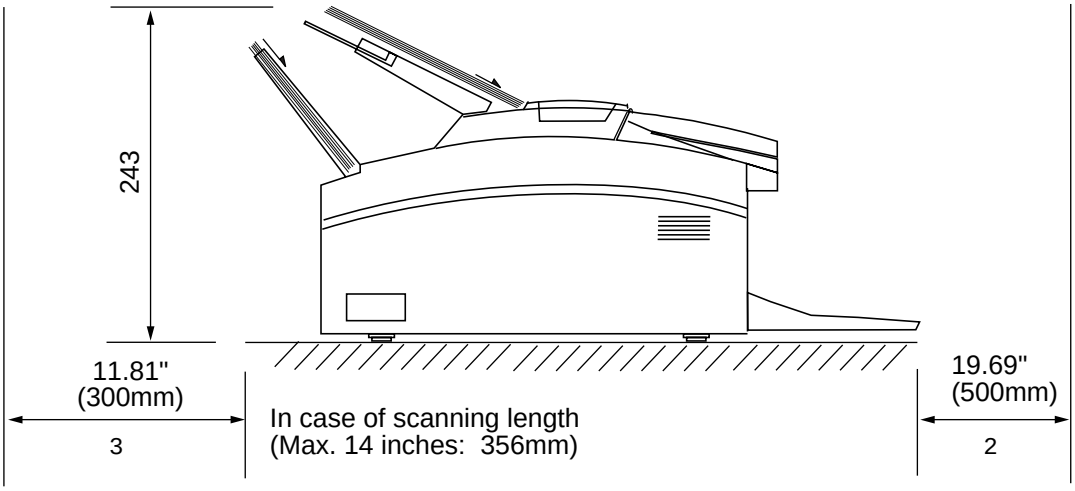
(4) Operating environment
Pressure: Equivalent to altitude of 2500 m and below.

(5) Exposure
Within five minutes at luminous intensity 2,000 lux (with the stacker cover opened).

(6) Required space for installation
The facsimile requires the space as shown below for safety and good operability.




FX-051-C2-001




FX-051-C2-002

***Note:*** ① This space is necessary for having the telephone set. (page 2-3)
② This space is necessary for installing the document stacker.
③ This space is necessary for ventilation.

(7) Levelness of installation surface
1 degree max.

(8) Other requirements
Avoid installing in any of the following places:
- A place exposed to direct sunlight
- A place near a heat source or exposed to vibration
- A dusty place
- A place in the atmosphere of acid gas, or steam etc.,
- A place exposed to quick temperature changes

## 2.3 Unpacking

Procedure

(1) Remove tape on the top of the carton box and open its cover.

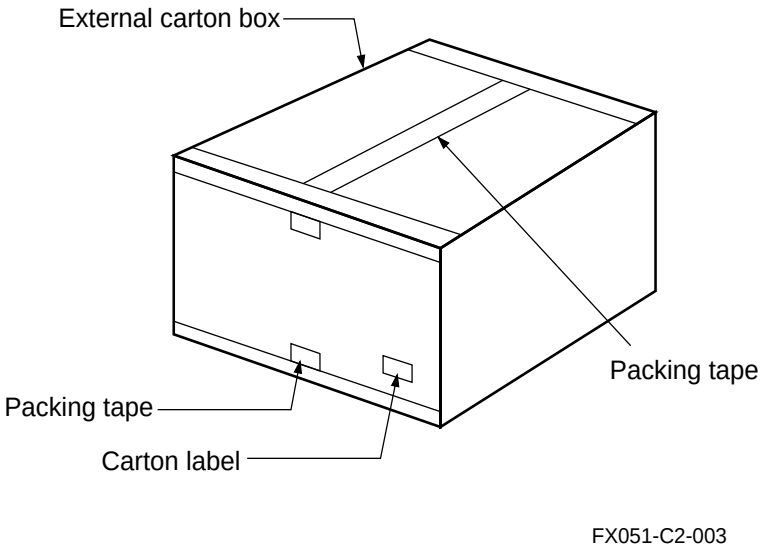



**Figure 2.3 Unpacking Procedure (1)**

(2) Take out the accessory box from the carton box.
(See Figure 2.3)

(3) Take out the machine with plastic wrapper from the box.

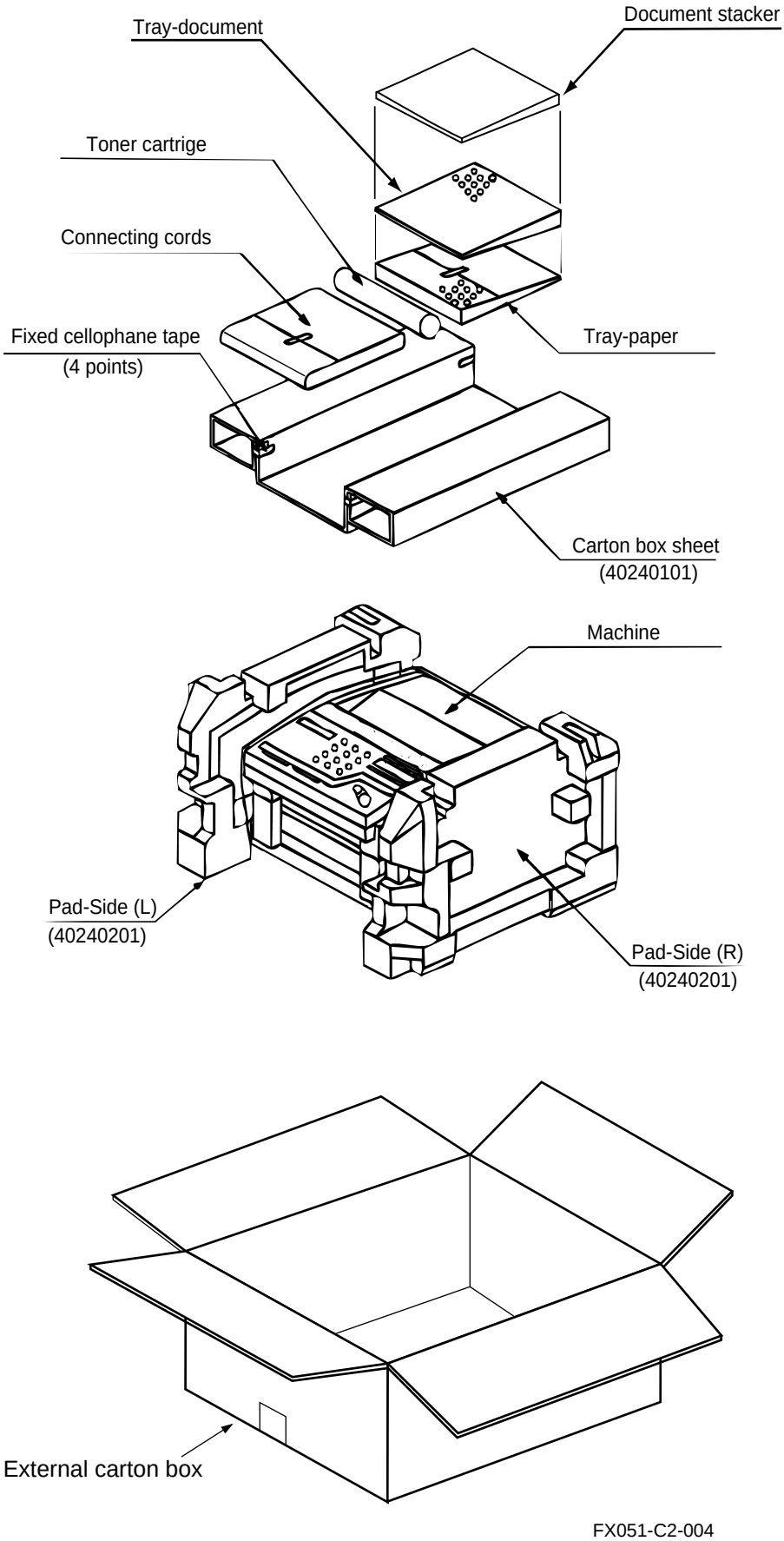



**Figure 2.3 Unpacking Procedure (2)**

## 2.4 Identification Contents

After having taken out the machine and accompanied accessories from the carton box, check the contents according to the following list:

**Table 2.4.1 Contents List**

| Item No. | Name | Q'ty | Remarks |
|---|---|---|---|
| 1 | OKIOFFICE84/ OKIFAX4500 facsimile | 1 | |
| 2 | AC power cord | 1 | |
| 3 | I/D unit | 1 | Already installed. |
| 4 | Toner cartridge | 1 | |
| 5 | Line cord | 1 | |
| 6 | One touch sheet | 1 | Already installed. |
| 7 | User's guide | 1 vol. | |
| 8 | Tray paper | 1 | |
| 9 | Tray document | 1 | |
| 10 | Document stacker | 1 | |

## 2.5 Installation of Attachments

(1) Items
- Image Drum (ID) Unit (already installed)
- Toner cartridge
- Recording paper
- Tray-paper, Tray-document and Document-stacker

(2) Procedure

1) Toner cartridge
- Peel off the fixed tape attached to the cover-top.
- Open the cover-top.

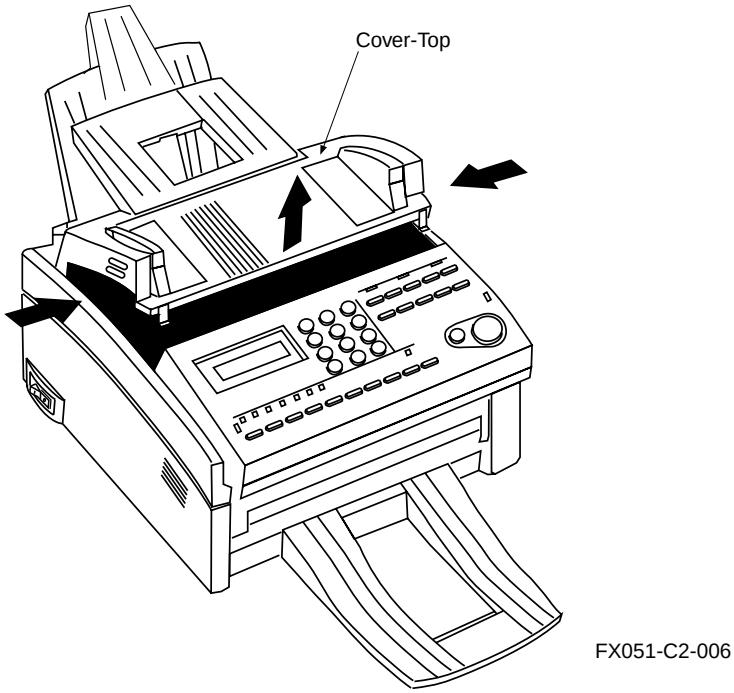



**Figure 2.5.1 Toner Cartridge Installation (1)**

- Take the plastic cover out of the ID unit.

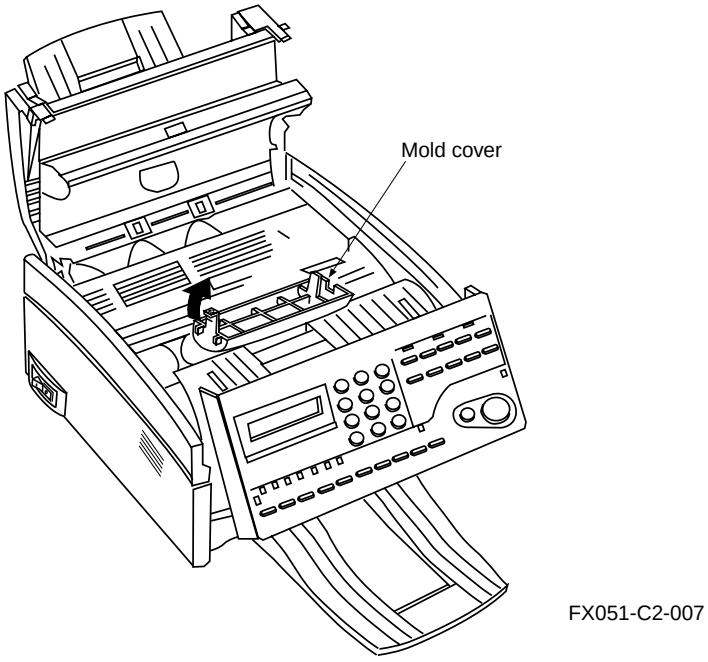



**Figure 2.5.2 Toner Cartridge Installation (2)**

- Take out the toner cartridge from the damp proof bag, shake it five or six times as shown in the illustration to eliminate the toner deflection, and peel off the seal gently.

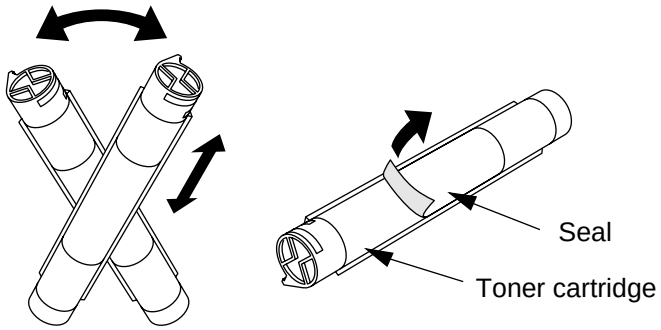



**Figure 2.5.3 Toner Cartridge Installation (3)**

- Ensure that the plastic tab on the right-hand side of the toner cartridge recess lines up with the groove on the toner cartridge.
- Press down on both ends to make sure the cartridge is fully seated.

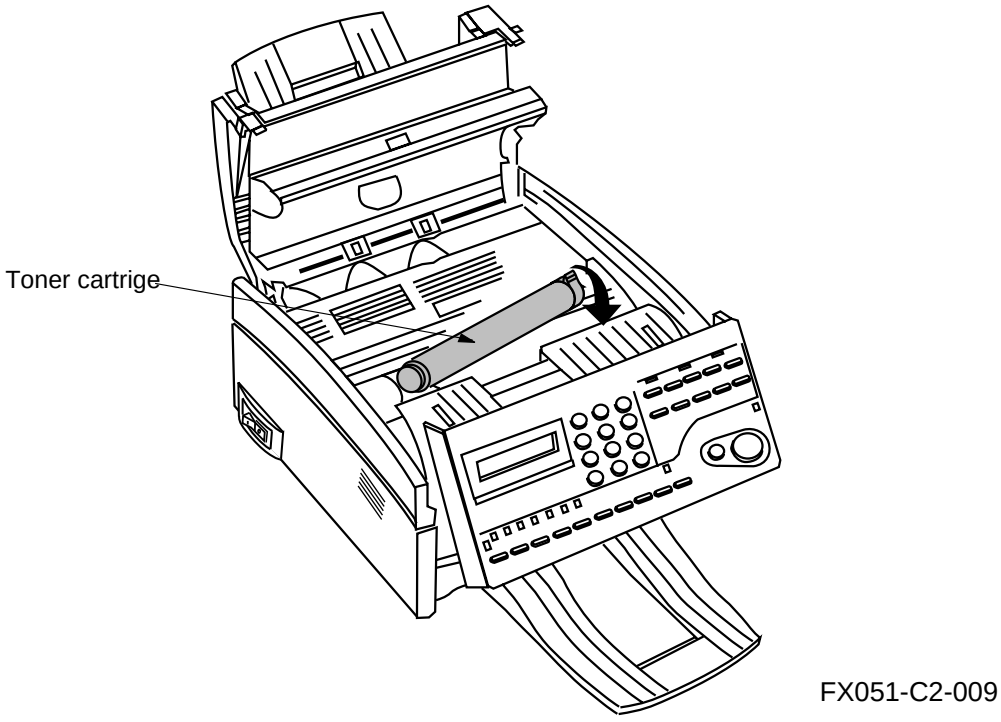



**Figure 2.5.4 Toner Cartridge Installation (4)**

- Push the gray tab forward until it stops.

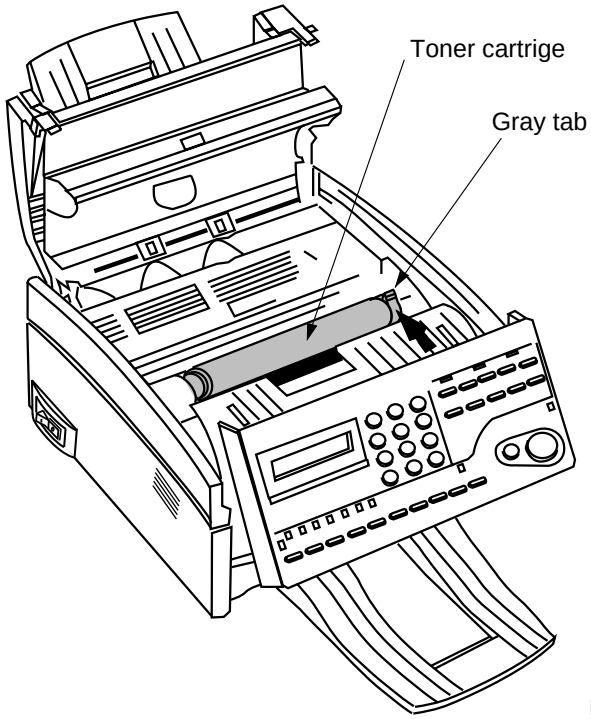



**Figure 2.5.5 Toner Cartridge Installation (5)**

- Clean the toner scattered in the vicinity of the toner cartridge using a cloth moistened with cold water. Do not use hot water since it makes the toner stick there.
- Close the cover assembly-top until the buttons have been locked completely.

(3) Recording paper

***Note:*** About 100 sheets of the new paper can be set on the tray-paper.

Loading the new paper.
Sheets must not exceed 100 sheets of the new paper on the tray-paper. If excessive sheets are set, it will cause paper jams.

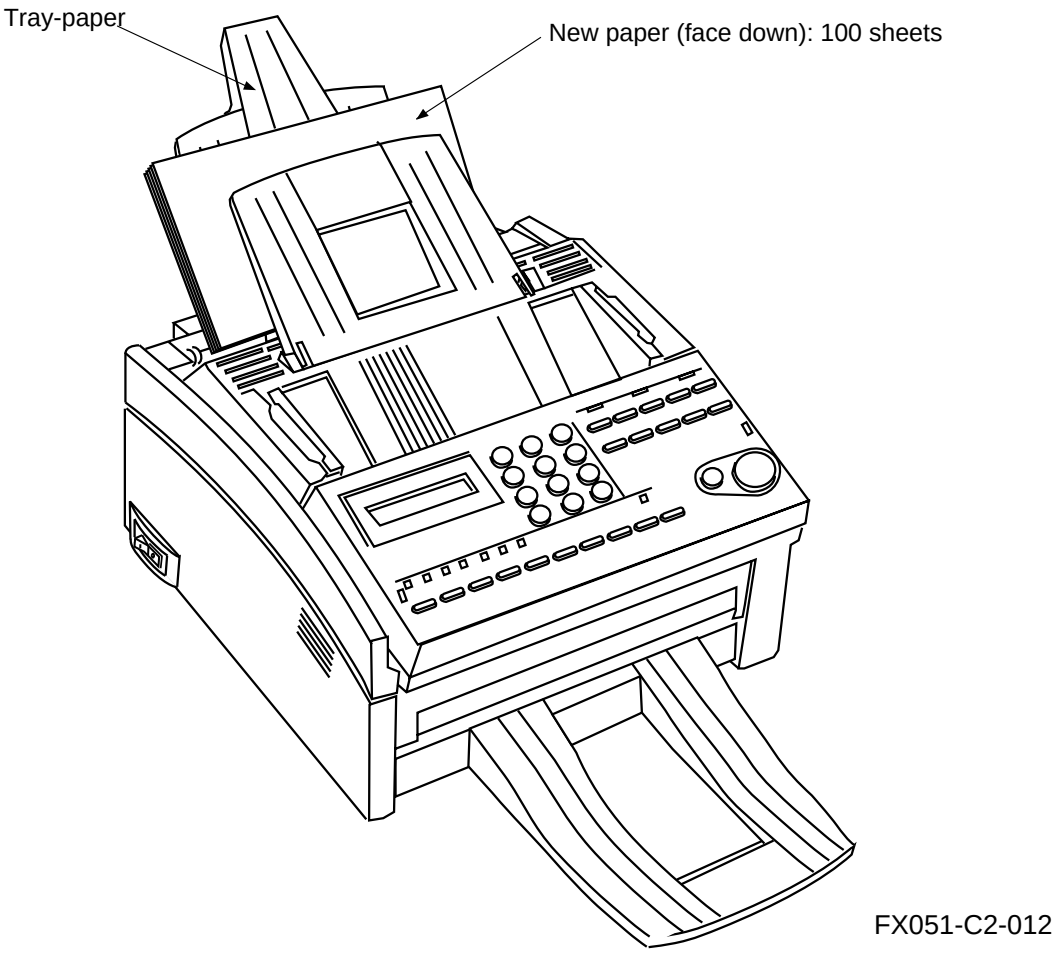



**Figure 2.5.6 Recording Paper Cassette Installation (2)**

(4) Tray-paper, Tray-document and Document-stacker

- Hang the tray-paper, the tray-document and the stacker-document onto hanging position.

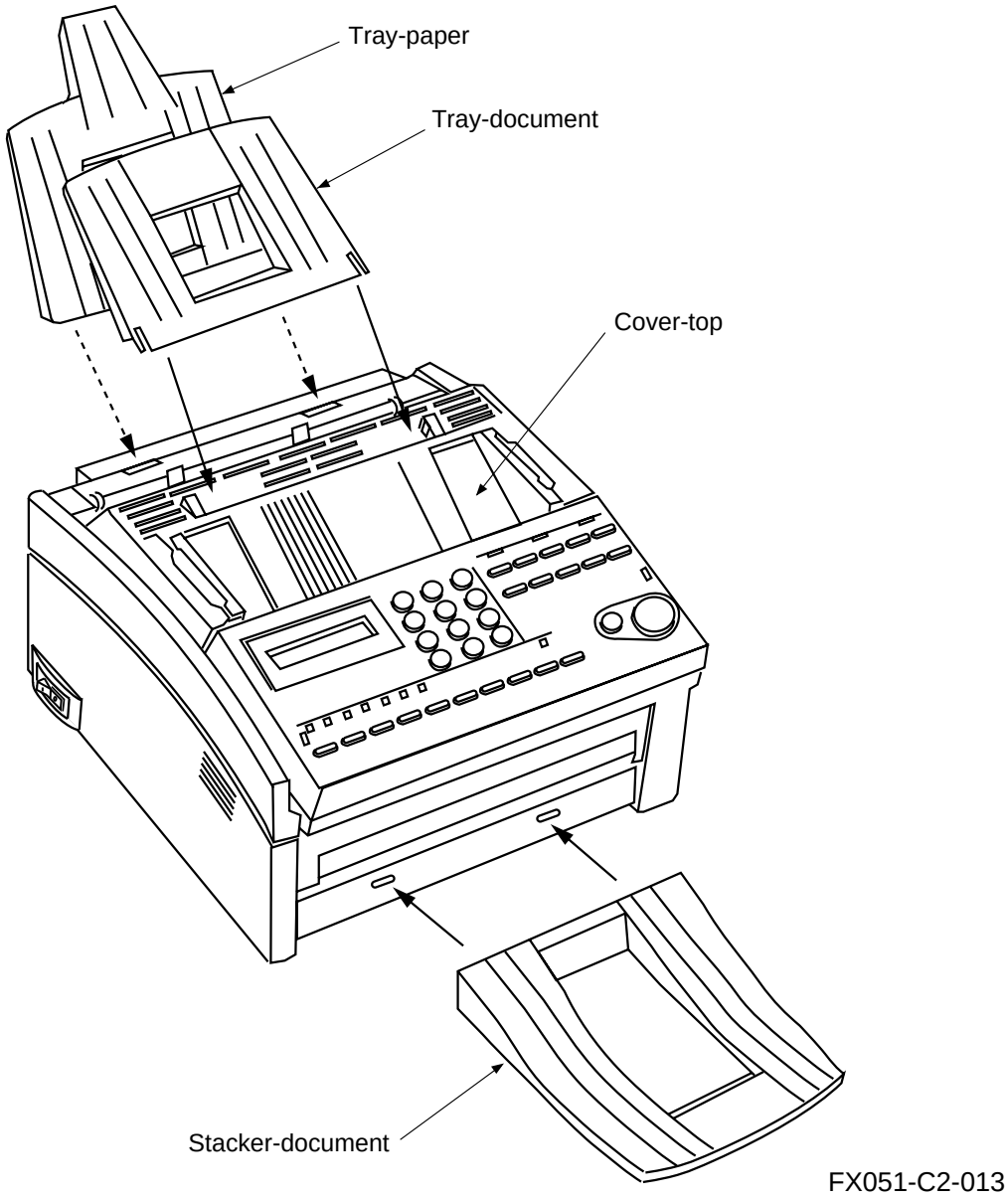


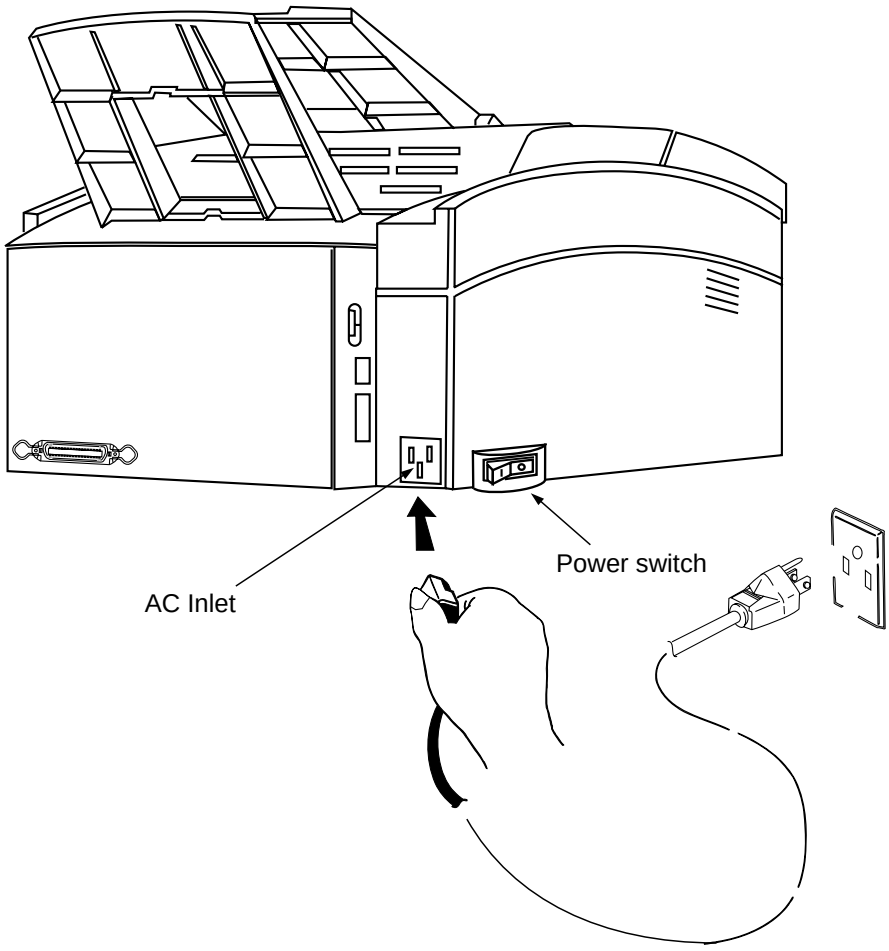

**Figure 2.5.7 Document Stacker Installation**

## 2.6 AC Cord Connection

The power supply is provided as follows.

Nominal input voltage 120VAC (Voltage range 102 to 127VAC)
Nominal input voltage 230VAC (Voltage range 198 to 250VAC)

Check whether the AC voltage of your input is within the above-mentioned voltage range and if so, check that the power switch is turned OFF. After turning off the power switch, connect the female plug of the AC cord to the machine and insert the male plug of the AC cord to the inlet receptacle. Turn the power switch ON and check that the display shows "(Time)" message indicating the standby mode.




FX051-C2-014

## 2.7 Telephone and Line Connections

(1) Procedure

- Connect the lines.

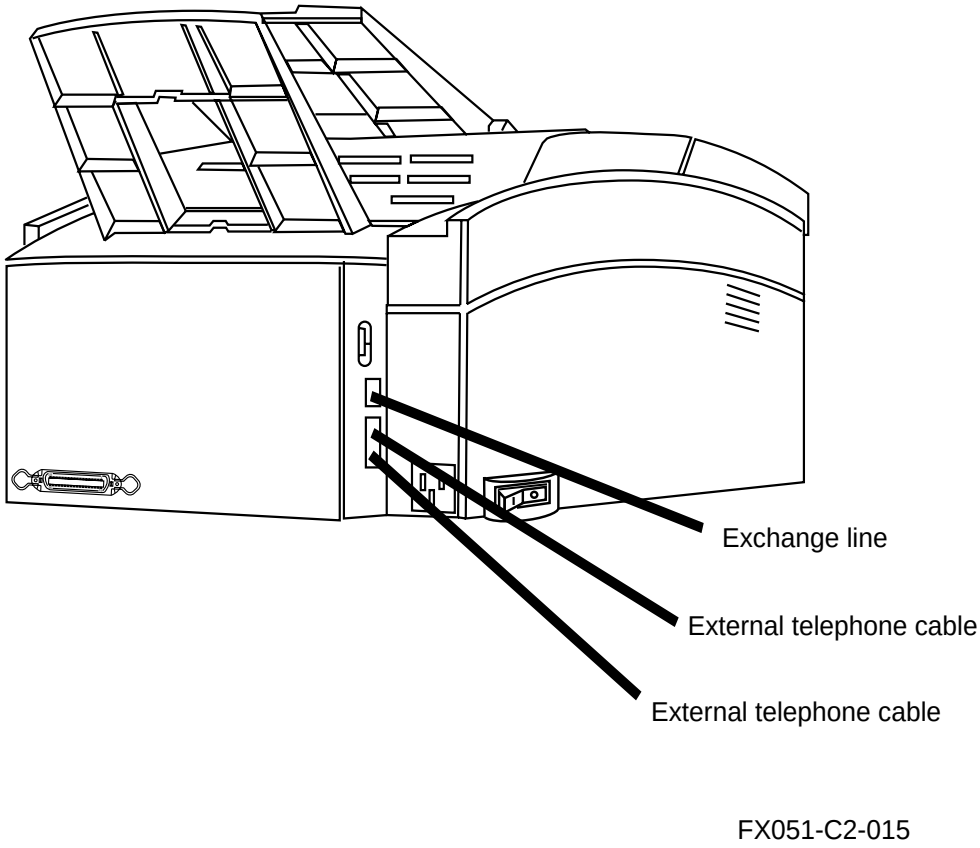



**Figure 2.7.1 Telephone and Line Connections**

## 2.8 Packing for Shipment

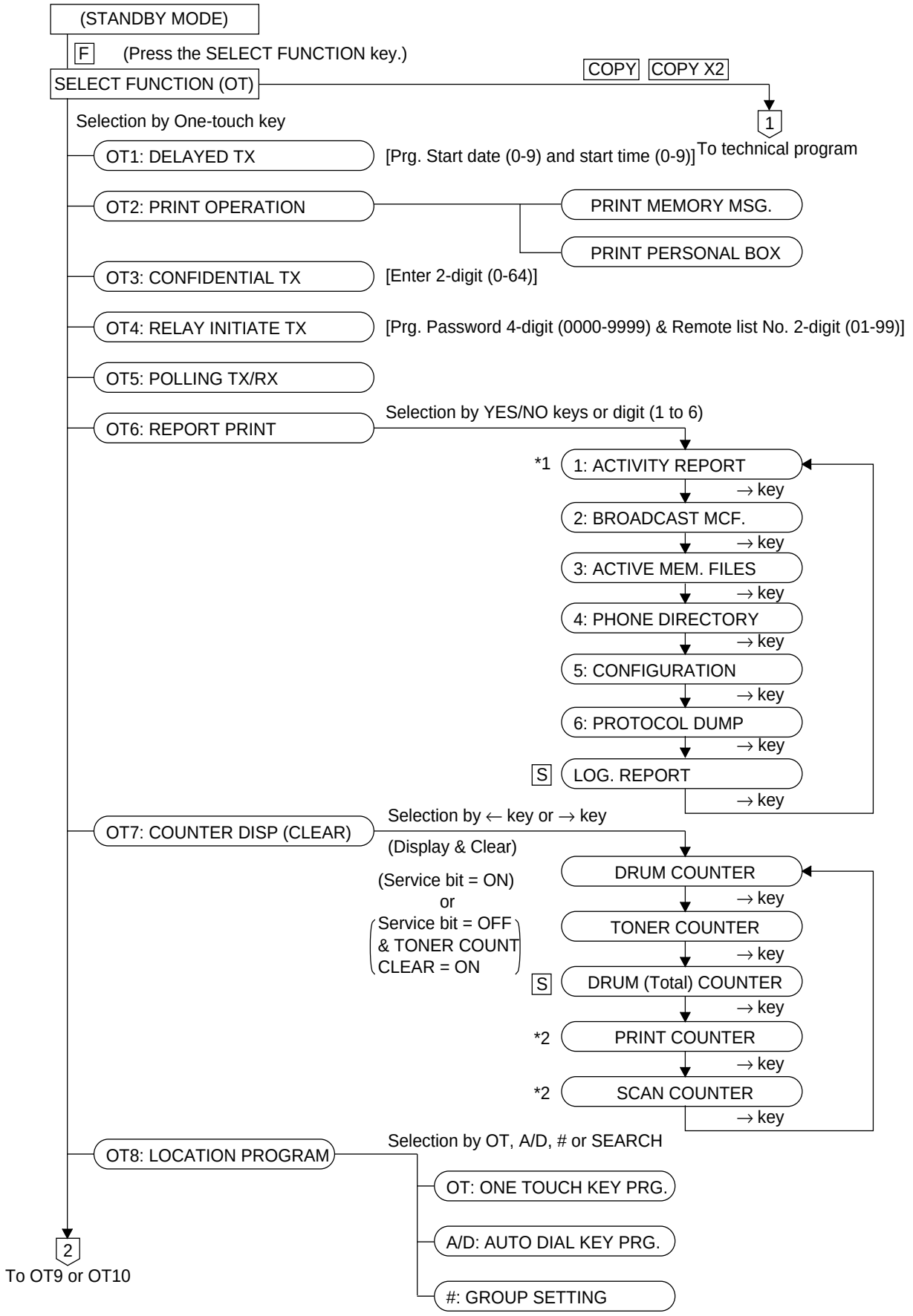
***CAUTION:*** When packing the OKIOFFICE84, OKIFAX 4500 series for shipment, REMOVE THE IMAGE DRUM AND TONER FROM THE UNIT AND SHIP SEPARATELY! Failure to do this will result in damage to the machine.

# B. Programming and Initial Settings

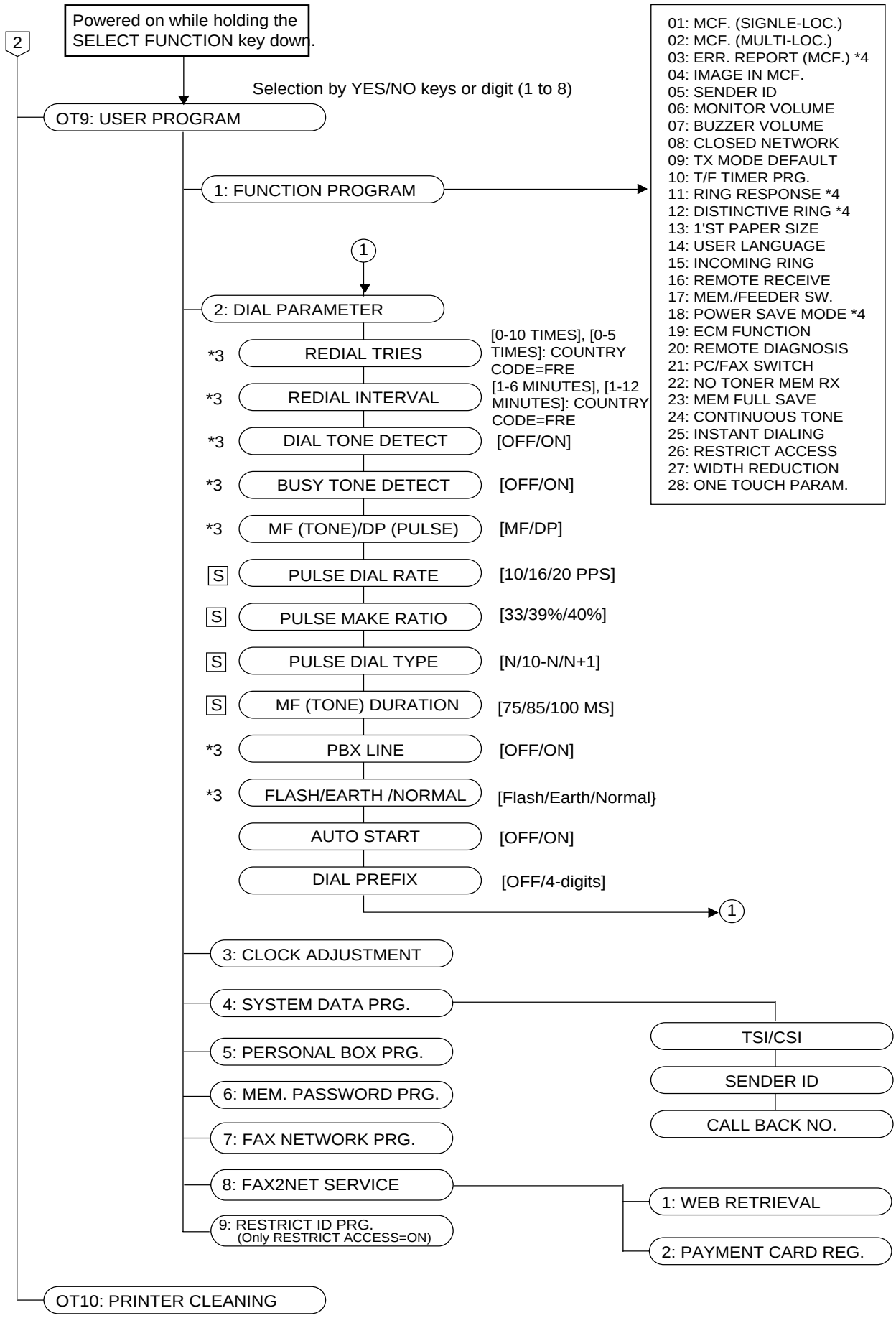
## 2.9 Initial Settings

### 2.9.1 General Procedure of Key Operation

Figure 2.9.1 shows the general procedure of key operation.



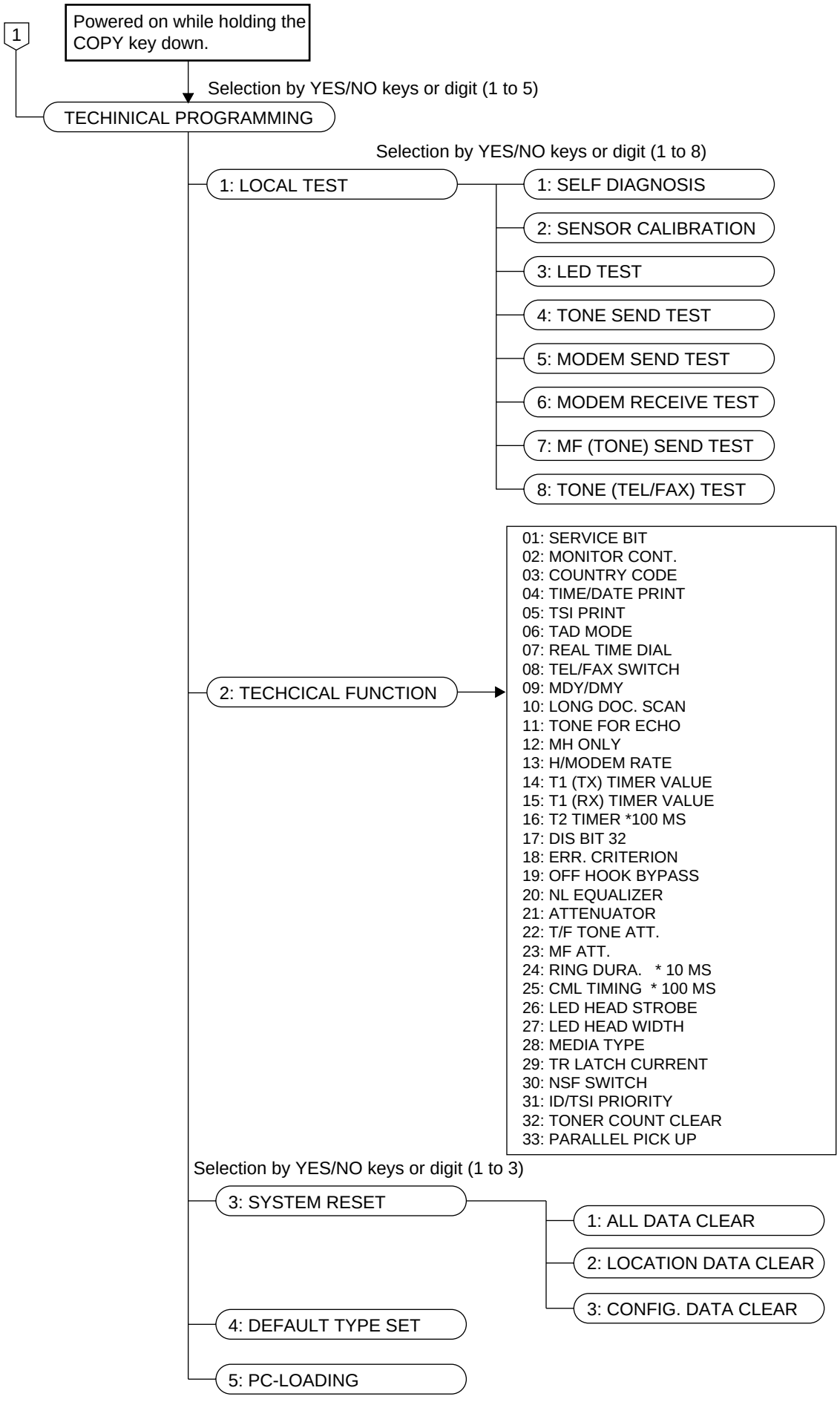

Note: When the machine is in POWER SAVE MODE, the machine returns to standby mode by pressing the START key.
*1: In case of Germany, Austria and Switzerland version, ACTIVITY REPORT message does not appear on the LCD display.
*2: User can read no. of counter in LCD but can not clear.
S: Effective if the service bit is set to ON.




*3: User can not select in some countries.

*4: When the service bit is set to OFF, ERR. REPORT (MCF.) of No. 03, RING RESPONSE of No. 11, DISTINCTIVE RING of No. 12 and POWER SAVE MODE of No. 18 are bypassed to the next function No. in some countries.

S: Effective if the service bit is set to ON.


1
Powered on while holding the COPY key down.
Selection by YES/NO keys or digit (1 to 5)
TECHINICAL PROGRAMMING
Selection by YES/NO keys or digit (1 to 8)
1: LOCAL TEST
1: SELF DIAGNOSIS
2: SENSOR CALIBRATION
3: LED TEST
4: TONE SEND TEST
5: MODEM SEND TEST
6: MODEM RECEIVE TEST
7: MF (TONE) SEND TEST
8: TONE (TEL/FAX) TEST
2: TECHCICAL FUNCTION
01: SERVICE BIT
02: MONITOR CONT.
03: COUNTRY CODE
04: TIME/DATE PRINT
05: TSI PRINT
06: TAD MODE
07: REAL TIME DIAL
08: TEL/FAX SWITCH
09: MDY/DMY
10: LONG DOC. SCAN
11: TONE FOR ECHO
12: MH ONLY
13: H/MODEM RATE
14: T1 (TX) TIMER VALUE
15: T1 (RX) TIMER VALUE
16: T2 TIMER *100 MS
17: DIS BIT 32
18: ERR. CRITERION
19: OFF HOOK BYPASS
20: NL EQUALIZER
21: ATTENUATOR
22: T/F TONE ATT.
23: MF ATT.
24: RING DURA. * 10 MS
25: CML TIMING * 100 MS
26: LED HEAD STROBE
27: LED HEAD WIDTH
28: MEDIA TYPE
29: TR LATCH CURRENT
30: NSF SWITCH
31: ID/TSI PRIORITY
32: TONER COUNT CLEAR
33: PARALLEL PICK UP
Selection by YES/NO keys or digit (1 to 3)
3: SYSTEM RESET
1: ALL DATA CLEAR
2: LOCATION DATA CLEAR
3: CONFIG. DATA CLEAR
4: DEFAULT TYPE SET
5: PC-LOADING

## 2.9.2 Technical Functions

This section explains setting items generally conducted by service personnel, not by users.

Table 2.9.1 shows the initial setting items and their purposes. (The default setting is different by the individual countries.)
Each item can be accessed by entering the corresponding service number on Technical Function.

The detailed procedures of the initial setting items will be explained on the following pages.

***Note 1:*** S-ON: Effective if the service bit has been set to ON.
FP: Function program setting
TF: Technical function setting

***Note 2:*** The fonts displayed on the LCD operation panel may differ from fonts written this manual.

**Table 2.9.1 (1/7) Service Personnel Initial Settings**

| T.F. No. | Item | Specifications | Default |
|---|---|---|---|
| 01 | Service bit | Switching serviceman/user operation.<br><br>ON : Service personnel's features are available.<br>OFF : Service personnel's features are not available.<br><br>To enable or disable the following functions:<br>• Drum (Total, Print, Scan), and toner counter clear<br>• Dial parameters<br>• etc | |
| 02 | Line monitor control | Changing the audible monitoring range.<br>FP +06 (To select the loudness of monitoring)<br><br>ON : Enable<br>OFF : Disable<br><br>***Note:*** In case of transmission mode, the monitor will be available during dialling, but the monitor will be switched off automatically after the elapse of specified time (about 5 sec.). However, when TF02 is set to ON, the monitor is available during communication also. | |
| 03 | Country code | Selecting the following country code:<br>USA, INT'L, GBR, IRL, NOR, SWE, FIN, DEN, GER, HUN, TCH, POL, SUI, AUT, BEL, HOL, FRE, ESP, ITA, GRE, AUS, NZL, SIN, HNG, POR, LTA, MEX | |
| 04 | Time and date print | Enables or disables the function of printing local date and time at the top of the received page.<br><br>OFF/ONCE/ALL selectable.<br>OFF: Time and date are not printed<br>ONCE: Time and date are printed at the top of the first page only.<br>ALL: Time and date are printed at the top of every page.<br><br>***Note:*** • Set at receiver. | |
| 05 | TSI print | Switches the function of printing TSI data from remote fax onto the received pages. TSI is printed at the leading edge of first reproduced copy. (Set at receiver.)<br>When TF04 is set to "ALL", TSI is printed for the all received pages.<br><br>ON : Enable<br>OFF : Disable<br><br>(Reference)<br>TSI; Transmitting Subscriber Identification | |

**Table 2.9.1 (2/7) Service Personnel Initial Settings**

| T.F. No. | Item | Specifications | Default |
|---|---|---|---|
| 06 | TAD mode<br>(For external telephone answering device.) | Switches an automatic voice message response to the calling station.<br>TAD mode is of three types (TYPE1/TYPE2/ TYPE3).<br><br>OFF/TYPE1/TYPE2/TYPE3 selectable.<br><br>TYPE1 means:<br>1. RING comes.<br>2. The TAD answers, returns the recorded voice message in TAD to calling party.<br>3. The FAX machine will continue to detect CNG signal while TAD works.<br>4. If the FAX machine detects CNG signal, the fax will go into normal receiving mode.<br>5. Even though the fax does not detect CNG signal, the fax will go to receiving mode in hook-on condition.<br><br>TYPE2 means:<br>The function from No. 1 to No. 4 of upper TYPE2 are the same as TYPE1.<br><br>5. If the fax does not detect CNG signal during working of TAD, the machine will go to standby mode.<br><br>TYPE3 means:<br>The function from No. 1 to No. 2 of upper Type 1 are the same as TYPE1.<br><br>3. The fax does not detect CNG signal during 15 seconds from TAD operation starting.<br>4. The fax starts CNG detection after 15 seconds from TAD operation. If the CNG is detected, the fax goes to the normal receive mode.<br>5. If the fax does not detect the CNG during TAD operation, the fax goes to standby mode. | |
| 07 | Real time dialing | Enables or disables the real time dialling.<br>3 types selectable. (OFF/TYPE1/TYPE2)<br><br>TYPE1: Real-time dialling is available when the telephone handset is OFF-HOOK.<br>TYPE2: Real-time dialling is available when the telephone handset is OFF-HOOK or HOOK key is pressed. | |
| 08 | TEL/FAX switching | Enables or disables the TEL/FAX automatic switching.<br><br>ON : Enable<br>OFF : Disable<br><br>(Related item: FP10, TF23) | |

**Table 2.9.1 (3/7) Service Personnel Initial Settings**

<table>
<tr><th>T.F. No.</th><th>Item</th><th>Specifications</th><th>Default</th></tr>
<tr><td>09</td><td>MDY/DMY</td><td>Switches LCD display and report print from month/day/year to day/month/year or vice versa. MDY/DMY selectable.</td><td></td></tr>
<tr><td>10</td><td>Long document SCAN</td><td>Switches the function of transmitting long-size document (more than 360 mm).<br><br>ON : 1500 mm or 60 min.<br>OFF : 360 mm or 60 min.<br><br>Note: 60 min is transmitting time.</td><td></td></tr>
<tr><td>11</td><td>Tone for Echo</td><td>Switches the function to apply to poor lines with echo in overseas transmission, etc.<br><br>ON: Enables<br>OFF: Disables<br><br><table><tr><td>Echo Protection</td><td>OFF</td><td>ON</td></tr><tr><td>Ignore 1st DIS</td><td>OFF</td><td>ON</td></tr><tr><td>CED-DIS timer</td><td>75 ms</td><td>1.5 sec</td></tr><tr><td>Tone for echo</td><td>OFF</td><td>ON</td></tr></table><br>(TF-11 table)</td><td></td></tr>
<tr><td>12</td><td>MH only</td><td>Switches the function of limiting image compression to the MH codes only.<br><br>ON : Coding scheme is MH only. When the receiving image data is affected by noise on the telephone line.<br>OFF : Any of MH, MR and MMR.</td><td></td></tr>
<tr><td>13</td><td>High-speed modem rate</td><td>Specifies the modem's starting speed, 14.4k, 9.6k, or 4.8kbps.</td><td></td></tr>
<tr><td>14</td><td>T1 (TX), timeout value</td><td>T1 (TX) is a time to detect up to 3 flags of DIS sent from a called fax machine.<br>Registers the time duration (in seconds) for which the fax waits for the remote station's answer.<br>This timer starts when the last dialled digit has been sent in the automatic transmission mode.<br><br>* Selects the 3 digit timer<br>010 to 255 sec selectable.(in one second steps)</td><td></td></tr>
<tr><td>15</td><td>T1 (RX), timeout value</td><td>T1 (RX), timeout value (later)<br>Registers the time duration (in seconds) for which the fax waits for the remote station's answer of individual country's specification. This timer starts after the DIS is transmitted. If T1 times out, the fax disconnects the line.<br>* Selects the 3 digit timer<br>010 to 255 sec selectable. (in one second steps)</td><td></td></tr>
</table>

**Table 2.9.1 (4/7) Service Personnel Initial Settings**

| T.F. No. | Item | Specifications | Default |
|---|---|---|---|
| 16 | T2, timeout value | T2, timeout value (layer)<br>Registers the time duration (in seconds) for which the receiving fax detects the EOL (End Of Line) signal during phase C. The fax will disconnect the line when EOL cannot be detected within T2.<br><br>* Selects the 3 digit timer<br>001 to 255 selectable. (in 100ms steps)<br>For example: 060 x 100 ms =6 s | |
| 17 | DIS bit32 | Selects whether a called fax should transmit DIS bit 32 or not.<br><br>ON : Transmits DIS bit 32.<br>OFF: Does not transmit DIS bit 32.<br>(When OFF, the following fanctions will not be supported:<br>• Reception of Extra Fine (8×15.4 line/mm)<br>• 300 dpi<br>• SEP/SUB frames<br><br>***Note:*** To improve compatibility between this fax machine and other company's fax machines. If communication error occurs frequently when a fax sender is an older version. | |
| 18 | Error criterion | Registers the threshould value whether to transmit RTN or MCF signal when the error occurs in received data.<br><br>00% to 99% selectable. (in one percent steps) | |
| 19 | Off-hook bypass | Switches the function of maintaining communication without hooking up the telephone set in normal testing etc.<br><br>ON : Enable<br>OFF: Disable | |
| 20 | NL equalizer | Selects equalization for the following cable lengths:<br>0 km/1.8 km/3.6 km/ 7.2 km selectable.<br><br>***Note:*** Relative to 1700Hz for length of 0.4mm diameter cable.<br>Equalizer level is the difference of gain of equalized signal between 0.3kHz and 3.4kHz. | |
| 21 | Modem attenuator | Adjusts the attenuation (dB) for the message send signal power level.<br>Adjusting value is 0 to 15 dB in one dB steps.<br>Since the maximum send signal power level (dB) of the fax is at 0 dB, you can select 0 dB to -15 dB in one dB steps for the send signal power level.<br><br>0 to 15 dB. selectable | |

**Table 2.9.1 (5/7) Service Personnel Initial Settings**

| T.F. No. | Item | Specifications | Default |
|---|---|---|---|
| | | ***Note:*** The send signal power level should meet your country's regulation. Some countries may specify the power level at a telephone exchange.<br>In that case, you should substract the specified level from the line cable attenuation to determine the send level of your fax. | |
| 22 | T/F tone attenuator<br>(for TEL/FAX SW) | Adjusts the attenuation (dB) for the quasi-ring back tone send signal of TEL/FAX switching.<br>Adjusting value is 0 to 15 dB in one dB steps. | |
| 23 | MF attenuator | Adjusts the attenuation (dB) for the send MF tone power level.<br>Adjusting value is 0 to 15 dB in one dB steps. | |
| 24 | Ring duration detection time | Selects the minimum ring detection time to meet country's requirements.<br>Adjusting time is 100 MS to 990 MS in 10 MS steps.<br><br>10 to 99 selectable.<br><br>For example: (120 ms)<br>12 x 10 ms = 120 ms | |
| 25 | CML timing | Selects the time from end of ring to CML-ON.<br>Adjusting time is 100 MS to 1900 MS in 100 MS steps.<br><br>0 to 19 selectable.<br><br>For example: (300 ms)<br>03 x 100 ms = 300 ms | |
| 26 | Strobe for LED head | Setting of LED print head strobe signals (00000-11111).<br>Selection of strobe width in LED head.<br>"00000" is lightest and "11111" is darkest.<br><br>***Note 1:*** When the rank marking of the new replaced LED print head (new part) is same as that of the old used LED print head (old part), you do not always have to set the LED print head strobe signal.<br><br>***Note 2:*** Intensity ranking is determined by the first, second and third digits from the right on the LED print head serial number.<br>(i.e. in .... 212, 212 is the intensity ranking.) | |

**Table 2.9.1 (6/7) Service Personnel Initial Settings**

| T.F. No. | Item | Specifications | Default |
|---|---|---|---|

Setting of Technical Function No. 26

| Setting / Rank Marking | MSB ↑ LSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 291–313 | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | |
| 269–290 | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | |
| 248–268 | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | |
| 229–247 | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | |
| 212–228 | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | |
| 196–211 | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | |
| 181–195 | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | |
| 168–180 | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | |
| 155–167 | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | |
| 143–154 | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | |
| 132–142 | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | |
| 122–131 | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | |
| 113–121 | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | |
| 105–112 | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | |
| 100–104 | | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | |

| | | | |
|---|---|---|---|
| 27 | Head width | Head width<br>You should confirm the head width by the following table, and then select it by this setting.<br><br>Head width is two types (TYPE1/TYPE2).<br><br>Setting / Head width / Head label<br>TYPE 1 / 2496 dots / 1228G1<br>TYPE 2 / 2560 dots / 1104G2 | |
| 28 | Media type | Selects the recording paper according to its quality.<br>Medium, Medium-heavy and Heavy selectable. | |
| 29 | Transfer roller latch current | Selects the latch current for transfer roller.<br>(–2/–1/0/+1/+2) | |
| 30 | NSF switch | NSF signal transmission selectable.<br>ON: Transmits NSF signal<br>OFF: Disables NSF signal<br><br>***Note:*** When NSF switch = OFF, the fax operation is shown as below.<br><br>• When transmitting, even if OKI NSF signal is detected from the remote machine, the fax transmits DCS signal (The fax does not transmit NSC signal.)<br><br>• When Remote Diag. = ON, the fax transmits NSF signal. | |

**Table 2.9.1 (7/7) Service Personnel Initial Settings**

<table>
<tr><th>T.F. No.</th><th>Item</th><th>Specifications</th><th>Default</th></tr>
<tr><td>31</td><td>ID/TSI priority</td><td>Selects ID/TSI printing in the distant station ID column of the report.<br>ID: Prints NSF signal with personal ID.<br>TSI: Prints TSI signal without NSF.<br><br>
<table>
<tr><th rowspan="2">Priority</th><th colspan="2">Set to ID</th><th colspan="2">Set to TSI</th></tr>
<tr><th>TX</th><th>RX</th><th>TX</th><th>RX</th></tr>
<tr><td>1</td><td>Personal ID</td><td>Personal ID</td><td>CSI</td><td>TSI</td></tr>
<tr><td>2</td><td>CSI</td><td>TSI</td><td>Dial No.</td><td>Dial No.</td></tr>
<tr><td>3</td><td>Dial ID</td><td>Dial ID</td><td>Personal ID</td><td>Personal ID</td></tr>
<tr><td>4</td><td>Dial No.</td><td>Dial No.</td><td>-</td><td>-</td></tr>
</table>
<br>Note: LCD display and Report printing gives preference to TSI/CSI signal than Personal ID.</td><td></td></tr>
<tr><td>32</td><td>Toner Count Clear</td><td>Enables or disables the clear operating of Toner Counter Clear (OT7) without Service bit ON/OFF (TF01).<br>ON: Enables<br>OFF: Disables</td><td></td></tr>
<tr><td>33</td><td>Parallel Pick Up</td><td>To control a receiving fax by 2 digits (the same digits as remote reception) from a telephone set connected parallel to the telephone line.<br>ON: To enable<br>OFF: To disable<br>(For the details, see Appendix A3, Section 4.5. Outline of Parallel Pick Up.)</td><td></td></tr>
</table>

1) TEL/FAX automatic switching

This function is used for the purpose of TEL/FAX automatic switching as follows.

(1) If the machine detects a call with a CNG signal indicating an auto send facsimile call, it starts an automatic document receiving operation.

(2) If machine detects a call without a CNG signal, machine generates the buzzer sounds as a telephone call. The calling person can hear a “ring back” tone within a predetermined time.

If the operator at the called side does not lift the handset within the predetermined time, the machine automatically starts a document receiving operation.
Voice conversation will automatically be available through the internal handset by lifting up the handset while the call buzzer is sounding.

***Note:*** 1: The predetermined time is selectable between 20 or 35 sec. (Function program No. 10)

2: No ringing signal is sent to the external telephone handset.

3: Choice of message sending level. The level is selectable from 0 to 15 dB in one dB step. (Technical function No. 22)

4: TEL/FAX mode is available by Technical Function No. 08.

2) TAD mode

TAD: Telephone Answering Device

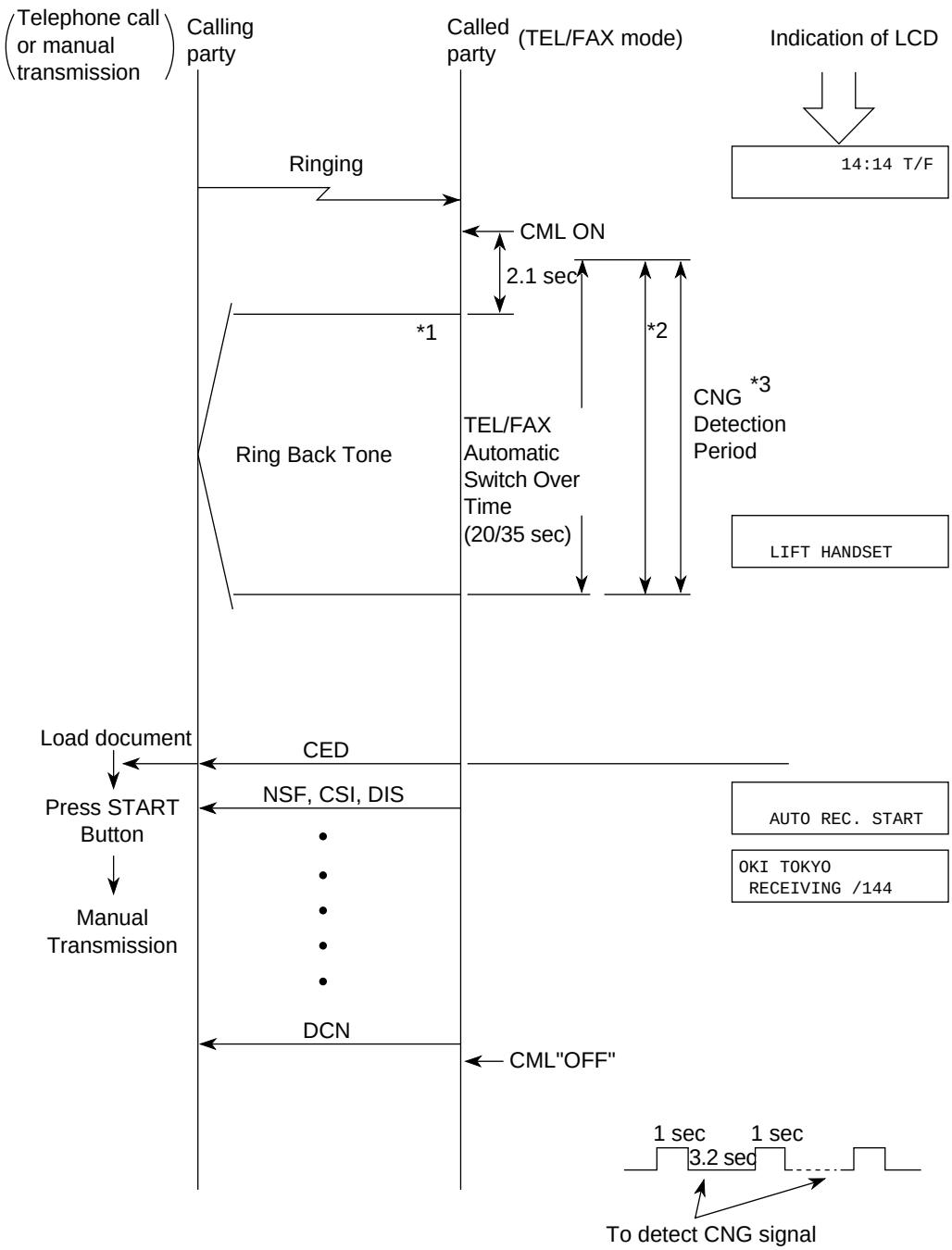
TAD can be connected to external telephone terminal to record your messages.

TAD records your speech and switches an automatic voice message response to the calling station.

***Note 1***: A choice of TAD mode is available by Technical Function No. 06.

***Note 2:*** The predetermined time is selectable between 20 or 35 sec.

- TEL/FAX mode flow chart




FX050VP-C2-018

***[Notes]***

*1: Ring Back Tone — 1 sec. ON, 3.2 sec. OFF

*2: When you want to talk by phone, pick up handset.

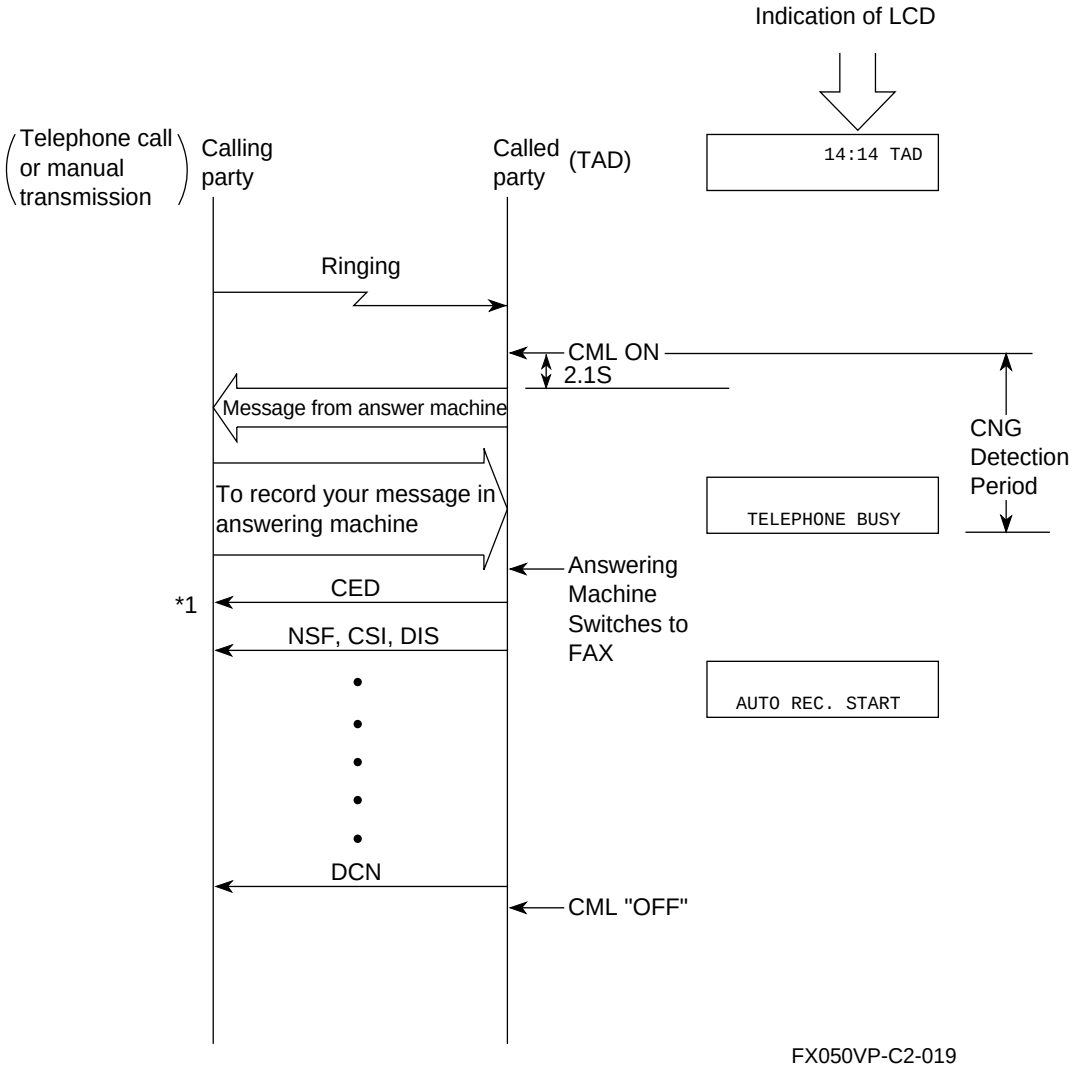
*3: The called party can send CED to the calling party immediately to start FAX communication if the CNG is detected during the period.

*4: If the fax does not detect CNG signal during working of TEL/FAX mode, LCD display indicates “LIFT HANDSET”.

- TAD mode flow chart

  In case of TYPE 1;

  Even though the fax does not detect CNG signal, the fax will go to receiving mode.

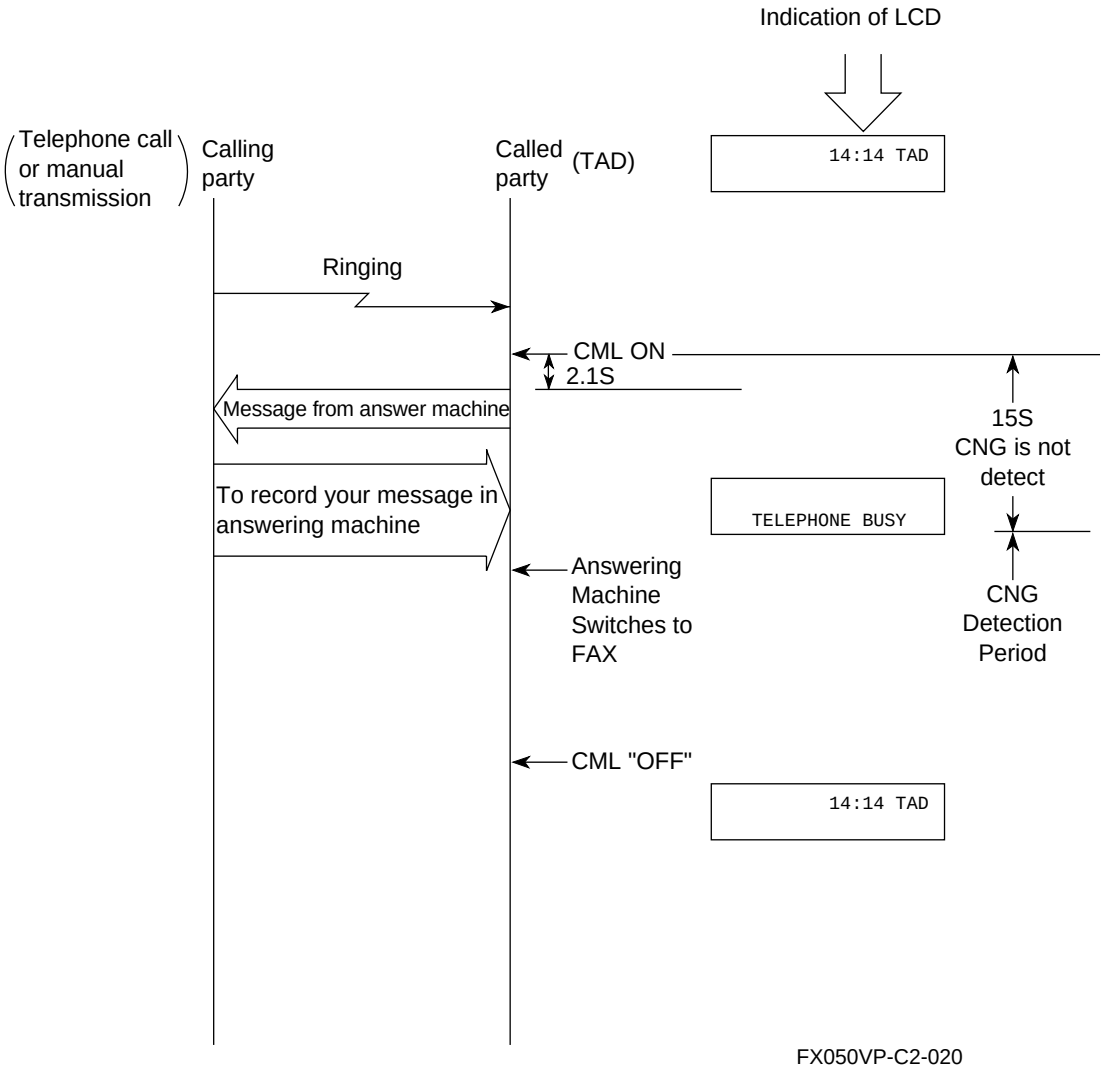



*1 To enable the manual TX mode.
Load document → Press START button → Manual transmission

- TAD mode flow chart

  In case of TYPE 3:

  The fax does not detect CNG signal during 15 seconds from TAD operation starting. The fax starts CNG signal detection after 15 seconds from TAD operation.
  When the fax does not detect CNG signal and ends TAD operation (on-hook of TAD operation), the fax return to standby state.



## 2.9.3 Technical Functions Example

***Note:*** The fonts displayed on the LCD operation panel may differ from the fonts written this manual.

(1) Service Bit Setting

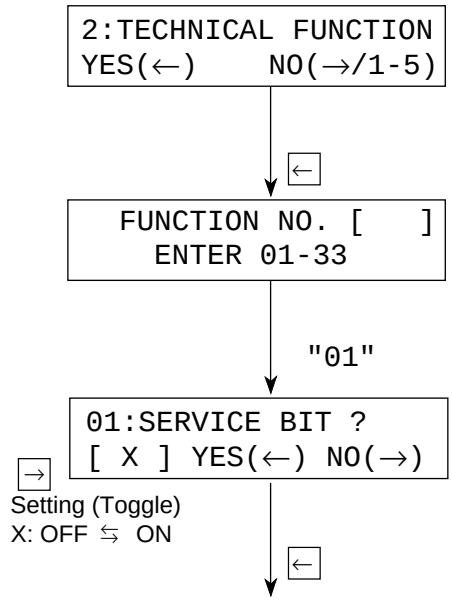
1) Purpose
To enable or disable the following functions:
- Drum and toner counter display (clear)
- Service default report printing
- Protocol dump report printing
- Ring response time setting
- Dial parameters setting
- Printer counters clearing

2) Procedure

**Operations:**

- To bring the LCD up to the desired message press SELECT FUNCTION key once, COPY key twice and "2"key. (In case of no message in memory)
- Press [←] key.
- Service bit setting is T.F. No. 01. Enter "01"

**The display shows:**




Reference: See Figure 2.9.1 on the next page for the general operation flow.

(2) Technical functions

**Operations:**

- Press SELECT FUNCTION key.
- Press COPY key twice.
- Press ← key.
- Press → key.
- Press ← key.
- Enter two-digit function number, then the display will show the set item corresponding to the number entered. If you want to set up all or several items starting with 01, then enter 01.

**The display shows:**

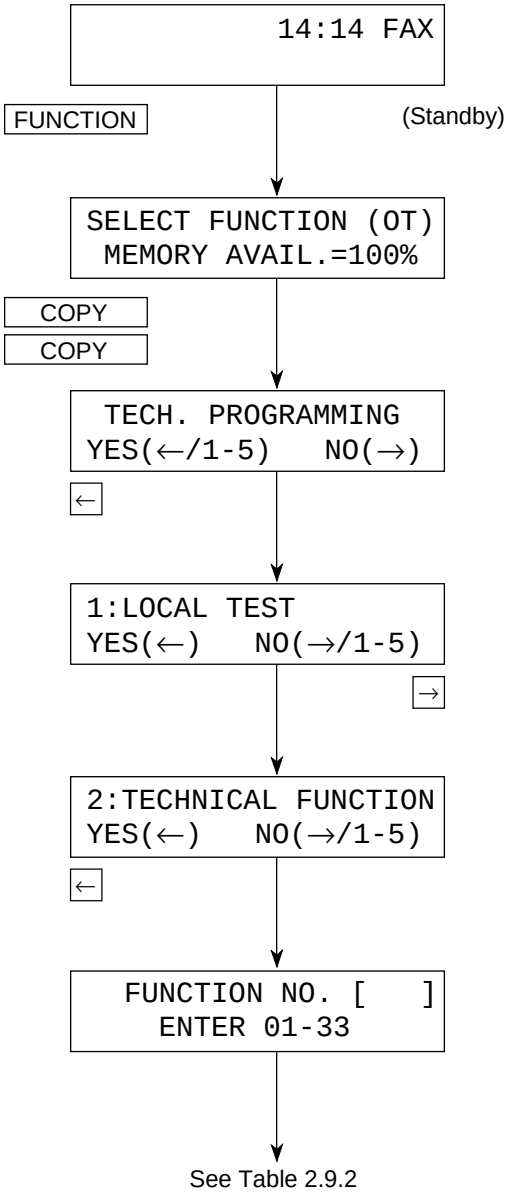


**Table 2.9.2 (1/5) Technial Functions**

| T.F. No. | Name of Function | The Display Shows |
|---|---|---|
| 01 | Service bit | 01:SERVICE BIT<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: OFF ⇆ ON |
| 02 | Line monitor control | 02:MONITOR CONT.<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: OFF ⇆ ON |
| 03 | Country code | 03:COUNTRY CODE<br>[ X ] YES(←) NO(→)<br>[→] Setting<br>X: USA→ INT →<br>•••••MEX |
| 04 | Time and date print | 04:TIME/DATE PRINT<br>[ X ] YES(←) NO(→)<br>[→] Setting<br>X: OFF→ ONCE→<br>→ALL |
| 05 | TSI print | 05:TSI PRINT<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: OFF ⇆ ON |
| 06 | TAD mode<br>(For external telephone answering device.) | 06:TAD MODE<br>[ X ] YES(←) NO(→)<br>[→] Setting<br>X: OFF→ TYPE1→<br>→TYPE2→TYPE3 |
| 07 | Real-time dialling | 07:REAL TIME DIAL<br>[ X ] YES(←) NO(→)<br>[→] Setting<br>X: OFF→ TYPE1→<br>→TYPE2 |
| 08 | TEL/FAX switching | 08:TEL/FAX SWITCH<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: OFF ⇆ ON |
| 09 | MDY/DMY format | 09:MDY/DMY<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: MDY ⇆ DMY |
| 10 | Long document transmission | 10:LONG DOC. SCAN<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: OFF ⇆ ON |

**Table 2.9.2 (2/5) Technial Functions**

| T.F. No. | Name of Function | The Display Shows |
|---|---|---|
| 11 | Tone for echo<br>(echo protection) | 11:TONE FOR ECHO<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: OFF ⇆ ON |
| 12 | MH only | 12:MH ONLY<br>[ X ] YES(←) NO(→)<br>[→] Setting (Toggle)<br>X: OFF ⇆ ON |
| 13 | High-speed modem rate | 13:H/MODEM RATE<br>[ X ] YES(←) NO(→)<br>[→] Setting<br>X: 4.8k → 9.6k → → 14.4k |
| 14 | T1 (TX), timeout value<br>(XTTO value) | 14:T1(TX)TIMER VALUE<br>[ X ] YES(←) NO(→)<br>[←] To 15 T1(RX) TIMER VALUE<br>X: 010 - 255 sec<br>[→]<br>14:T1(TX)TIMER VALUE<br>[_ ] ENTER 010-255<br>3-digit timer entered.<br>14:T1(TX)TIMER VALUE<br>[060] YES(←) NO(→)<br>[→]<br>(Example) |
| 15 | T1 (RX), timeout value | 15:T1(RX)TIMER VALUE<br>[ X ] YES(←) NO(→)<br>[←] To 16: T2 TIMER VALUE<br>X: 010 - 255 sec<br>[→]<br>15:T1(RX)TIMER VALUE<br>[_ ] ENTER 010-255<br>3-digit timer entered.<br>15:T1(RX)TIMER VALUE<br>[035] YES(←) NO(→)<br>[→]<br>(Example) |

**Table 2.9.2 (3/5) Technial Functions**

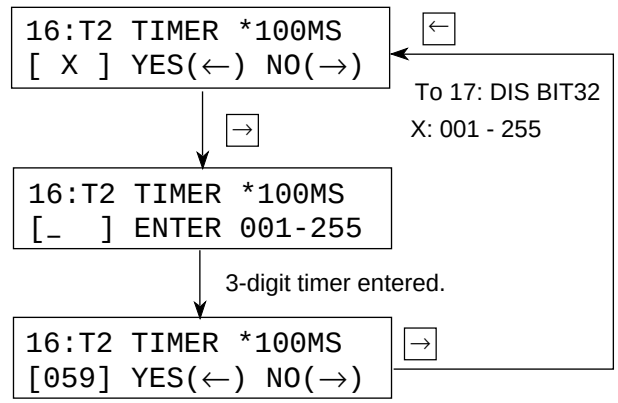
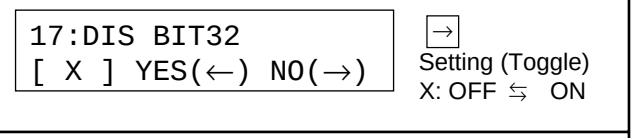
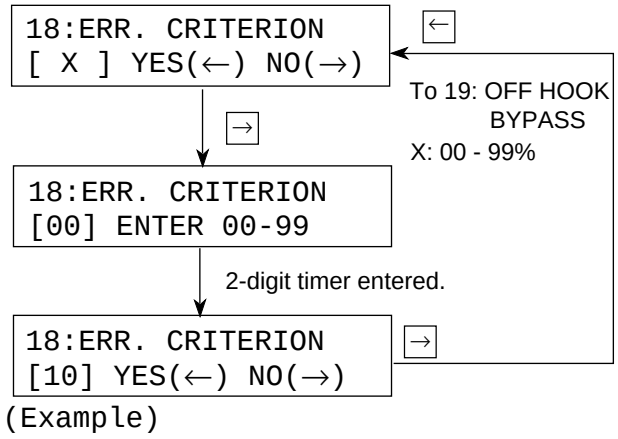
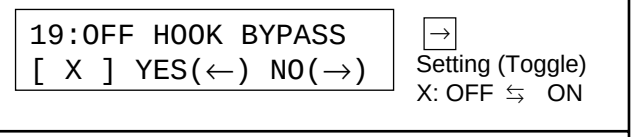
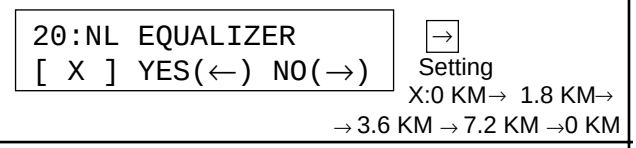
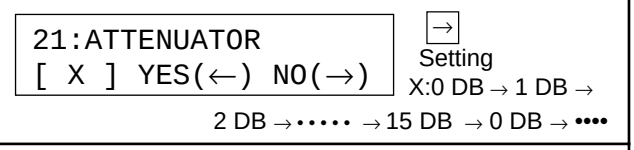
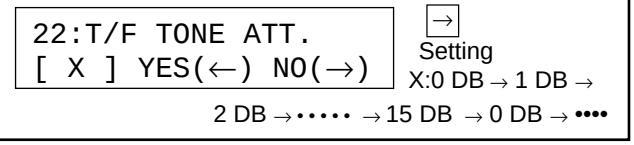
| T.F. No. | Name of Function | The Display Shows |
|---|---|---|
| 16 | T2, timeout value |  |
| 17 | DIS bit 32 |  |
| 18 | Error criterion |  |
| 19 | Off-hook bypass |  |
| 20 | NL equalizer |  |
| 21 | Modem attenuator |  |
| 22 | T/F tone attenuator<br>(for TEL/FAX switch) |  |

**Table 2.9.2 (4/5) Technial Functions**

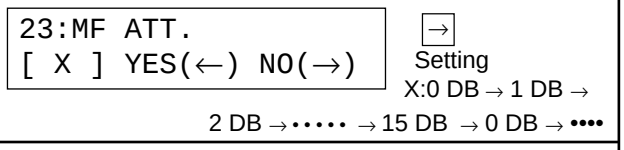
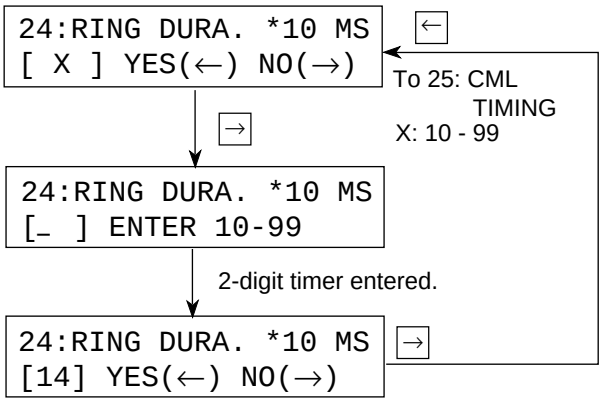
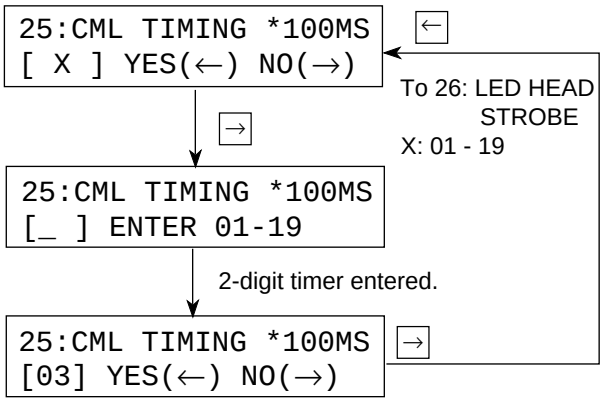
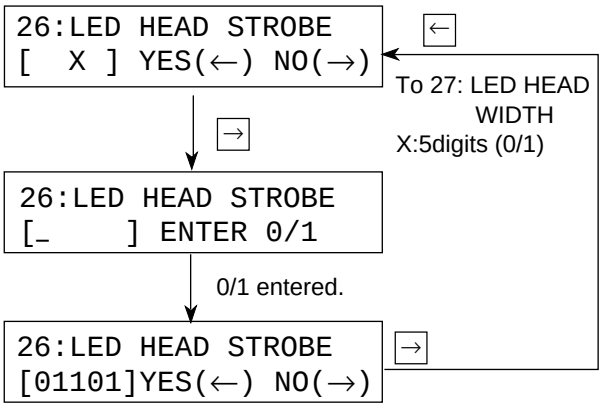
| T.F. No. | Name of Function | The Display Shows |
|---|---|---|
| 23 | MF attenuator |  |
| 24 | Ring duration detection time |  <br>(Example) |
| 25 | CML timing |  <br>(Example) |
| 26 | LED Head strobe |  <br>(Example) |

**Table 2.9.2 (5/5) Technial Functions**

| T.F. No. | Name of Function | The Display Shows |
|---|---|---|
| 27 | LED Head Width | 27:LED HEAD WIDTH<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: TYPE1 ⇆ TYPE2 |
| 28 | Media type | 28:MEDIA TYPE<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: M → MH → H |
| 29 | Transfer roller clatch current | 29:TR LATCH CURRENT<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X:–2 → -1 → 0 → +1 → +2 |
| 30 | NSF switch | 30:NSF SWITCH<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 31 | ID/TSI priority | 31:ID/TSI PRIORITY<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: ID ⇆ TSI |
| 32 | Toner count clear | 32:TONER COUNT CLEAR<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 33 | Parallel Pick Up | 33:PARALLEL PICK UP<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| | | |
| | | |
| | | |
| | | |

## 2.9.4 User's Functions

This section explains the items usually set up by general users.

Table 2.9.3 shows the initial setting items and their purposes.

Each F.P.can be accessed by entering the corresponding function number on Function Programming.

The detailed procedure of the initial setting items will be explained on the following pages.

***Note*:** S-ON: Effective if the service bit has been set on.
FP: Function program setting
TF: Technical function setting

**1) User's Functions**

**Table 2.9.3 (1/5) User's Functions**

| No. | Item | Specifications |
|---|---|---|
| 1 | Auto dial<br>1) One-touch dial | 10 one-touch keys are provided.<br>Max. 32 digits for each location number.<br><br>In addition to an ordinary location number, another alternate location number can be registered in to each one-touch key.<br><br>Purposes of this alternate location number:<br>1) Fax dial<br>A fax number is registered as an alternate location number. When a call to the first location number is not answered, the alternate location number will be automatically dialled. |
| | 2) Two-digit dial | 70 different codes are provided.<br><br>* Two- digit location code: 01 to 70<br><br>Max. 32 digits for each location number. |
| | 3) Keypad dial | With ten-key pad.<br>Max. 40 digits for one operation |
| | 4) Chain dial | The number of dialling digits can be expanded to longer digit numbers by chaining any number of the above 1), 2) and 3). |
| | 5) Mixed dial | Type of dialling can be changed from pulse dial to tone dial halfway in dialling process.<br>The changing point is specified by the * key. This feature is not available in all countries. |
| 2 | Manual dial | With a telephone handset. |
| 3 | Receive mode<br>1) Auto receive mode | Selectable by key operation. |
| | 2) Manual recevice mode | Selectable by key operation. |
| | 3) Telephone/fax automatic switchover | Selectable by key operation.<br>The fax recognizes a fax call from a verbal call as follows:<br><br>If the fax detects a call with a CNG signal, it starts an automatic document receive operation.<br><br>If it detects a call without a CNG signal, it sounds the buzzer to indicate a voice call. Operator can answer the call by lifting the telephone handset.<br>If he or she does not lift the handset within predetermined time (20 sec. or 35 sec.), the fax automatically starts a document receive operation.<br><br>* FP + 10 (To determine the timer.)<br><br>***Note:*** Refer to page 2-36. |

**Table 2.9.3 (2/5) User's Functions**

| No. | Item | Specifications |
|---|---|---|
| 4 | Automatic redial | PTT parameter setting disables or enables this feature, and specifies redial times and redial intervals.<br>* See 2.9.12 for the service bit condition depending on PTT parameters. |
| 5 | Last No. redial | "REDIAL" key is provided. There is no limit on number of repeat attempts. If machine is in Power Save mode (not available for OKIOFFICE84) manual redial with REDIAL key is not possible. |
| 6 | Group dial | • 5 dialling groups<br>Max. 80 locations.<br><br>Grouping some one-touch keys and some two-digit auto dial codes to which telephone numbers have been assigned. This group setting makes broadcast operation simple. |
| 7 | Telephone directory and location ID<br>(Alpha search) | In addition to fax numbers, an alpha/ numeric name can be assigned to each of one-touch keys and two-digit dial codes, 01 to 70.<br>Any location ID can be searched and displayed on LCD. Then direct dialling to the ID's station can be performed.<br><br>There are two methods of searching:<br>(1) Search based on the first character specified.<br>(2) Searching by displaying all registered location IDs one after another in the lexicographical order.<br><br>Location ID: Max. 15 characters |
| 8 | Voice request | A voice request from the transmitter is available only upon completion of the total message transmission.<br><br>A voice request from the receiver is available at the end of each page being received. |
| 9 | Local copy | Printing resolution:<br>Horizontal: 300 dpi (Fine, EX Fine), 200 dpi (SDT)<br>Vertical: 3.85 (STD), 7.7 (Fine) or 15.4 line/mm (EX Fine) |
| 10 | Multiple local copy | Up to 50 copies. |
| 11 | Manual loading feeder | One single sheet from the feeder below the paper exit can be copied.<br><br>Example of sheets: Transparency for an overhead projector |

**Table 2.9.3 (3/5) User's Functions**

| No. | Item | Specifications |
|---|---|---|
| 12 | Broadcast<br>(Memory transmission) | Max. 90 remote locations can be specified by the following means:<br>• One-touch keys (with of without a group list).<br>• Two-digit auto dial codes.<br>• 10 keypad dial number (Max.)<br><br>One delayed time of calling for this feature can be specified unless any other delayed calling feature has been specified.<br><br>The combination of 1 delayed broadcast and one immediate calling of broadcast is possible.<br>However, the setting of delayed transmission and delayed broadcast must not exceed the total number of specified time which is different according to the machine.<br><br>When multiple locations are specified for one broadcast<br>(1) The fax prints a broadcast entry report, if specified in operating sequence.<br><br>(2) The fax can print a broadcast confirmation report. (FP + 02 To enable or disable this printout) |
| 13 | Delayed transmission from the memory | The fax can automatically transmit documents at five specified times from the memory. |
| 14 | Polling transmission<br>(To be polled) | Document(s) placed on the feeder can be collected by a remote station. |
| 15 | Polling reception | The fax can collect documents from one remote station. |
| 16 | Bulletin polling | A kind of polling transmission. Bulletin polling enables polling transmission many times until deleting the documents stored in the memory. |
| 17 | Transmission preparation (Hopper) | An operator can prepare documents for transmission even while the fax is enagaged in message reception. They will be automatically transmitted upon completion of the reception.<br><br>An operator can also prepare documents for transmission during transmission from memory. |

**Table 2.9.3 (4/5) User's Functions**

| No. | Item | Specifications |
|---|---|---|
| 18 | No toner reception | The fax can temporarily store received messages in memory when toner has run out. The messages are printed when toner has been newly supplied or an operator presses the SELECT FUNCTION key followed by the one-touch key No. 2 under the LCD message “PRINT MEMORY MSG.” in the standby mode.<br><br>*FP + 22 (To enable or disable this function) |
| 19 | Smooth printing | The documents received in the STD mode can be printed at the FINE resolution by means of generating one line based on the two consecutive original lines and printing it between them. |
| 20 | Dual Access | The documents for transmission can be read into the memory even while the fax is engaged in another memory transmission, reception in the ECM or non-ECM mode.<br><br>1) Operation of memory transmission while the fax is engaged in a communication (memory TX, memory RX or print mode RX).<br><br>2) Copy while the fax is engaged in a communication (memory TX or memory RX).<br><br>***Note:*** Condition for operation<br><br>a) Copy is invalid when the machine is already engaged in an operation which is using or could use the printer.<br><br>3) Call reception while the fax is engaged in scanning documents for memory transmission when the auto receive mode is in “FAX” or “T/F” mode, although “TEL” mode is not valid.<br><br>Refer to sub-section 2.9.7 for dual access operation.<br><br>For the patterns of dual access refer to the following, Dual Access Combination Table. |

**Table 2.9.3 (5/5) User's Functions**

| No. | Item | Specifications |
|---|---|---|

**Dual Access Combination Table**

| 1'st \ 2'nd | | PC1 ON | | | | |
|---|---|---|---|---|---|---|
| | | Reception | Prefeed | Remote input display | Preparation TX | Scanning to Memory |
| ON HOOK | Standby | ○ | ○ | ○ | ○ | ○ |
| | During FAX Calling | × | ○ | × | × | ○ |
| Call Reception | During RING RESPONSE | × | ○ | ○ | ○ | ○ |
| | During detection of TEL/FAX | × | ○ | × | × | × |
| | During TAD detection | × | ○ | × | × | × |
| | 1st Phase B | × | ○ | ○ | ○ | ○ |
| Feeder TX | Calling ~ Transmission | × | × | × | × | ○ |
| | Transmission after scanning | × | ○ | ○ | ○ | ○ |
| Memory TX | During Scanning | ○ | × | × | × | ○ |
| | Dialling and Calling | × | ○ | ○ | ○ | ○ |
| | During TX | × | ○ | ○ | ○ | ○ |
| Polling RX | Dialling and Calling | × | ○ | ○ | ○ | ○ |
| Memory RX | | × | ○ | ○ | ○ | ○ |
| Paper RX | Reception and print | × | ○ | ○ | ○ | ○ |
| | Residual Print Processing | ○ | ○ | ○ | ○ | ○ |
| | Memory reception | × | ○ | ○ | ○ | ○ |
| During voice request is initiated. | | × | ○ | × | × | × |
| During copy | | ○ | ○ | × | × | × |
| During automatic printing of received messages | | ○ | ○ | ○ | ○ | ○ |
| During automatic printing of reports | | ○ | ○ | ○ | ○ | ○ |
| During operation | | × | ○ | × | × | × |

* Operation during communication is not determined yet.

<Note> ○ : Available, × : Not available

### 2) User's Initial Settings

***Note***: The fonts displayed on the LCD operation panel may differ from fonts written this manual.

2)-1 One Touch Key Operations

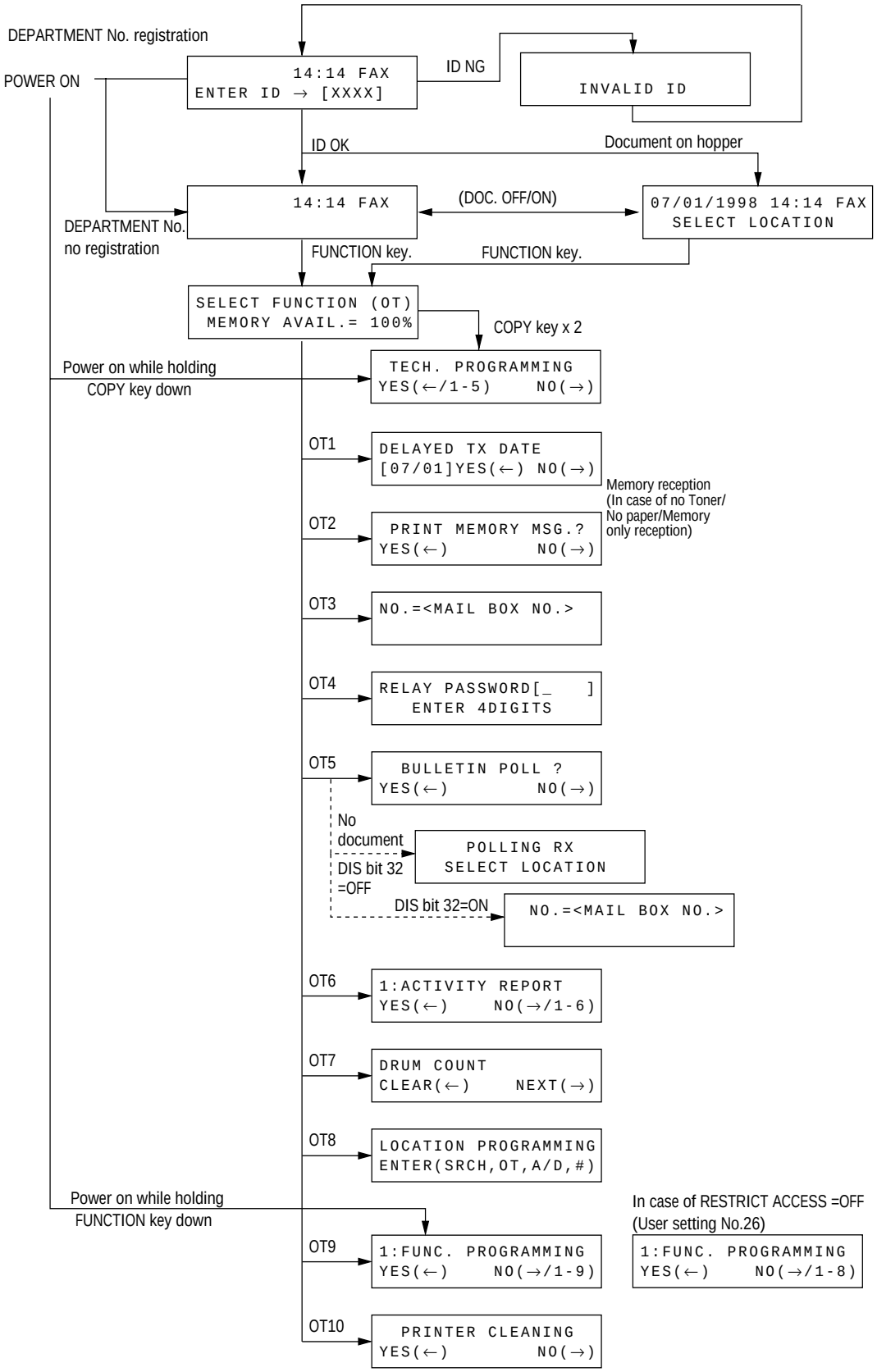


**Table 2.9.4 (1/5) User's Initial Settings (One-touch key Program)**

| F+OT No. | Item | Specifications |
|---|---|---|
| 1 | Delayed transmission (TX) | This function enters a message transmission time(s) and location(s) for execution at a specified time. 5 specified times can be registered (within 3 days.) |
| 2 | Print from Message in Memory (Print Memory MSG.) | To print out the received messages from memory in "MSG. IN MEMORY" mode, or when the machine has run out of recording paper (including the door open and no toner state). When received messages are in the memory. "MSM. IN MEMORY" is indicated on the LCD. When printing in the Memory Only Reception, an operator has to print the received message by the Memory message printing operation. |
| | Print from Confidential Reception Message (Print Personal Box) | To print out the confidential received messages in the memory with 1-digit personal box number.<br>The maximum number of personal boxes is 8. Personal boxes are numbered 1 to 8. When confidential received messages are in the memory, "MESSAGE IN MEMORY" is indicated on the LCD. |
| 3 | Confidential transmission | This function transmits a Confidential-marked message to any one of 64 predesignated mailboxes provided in a distant machines.<br><br>To program the mail box number 01 to 64.<br>Available remote station's mail box numbers:<br>OKIFAX 2400/2600: 01 to 40<br>OKIFAX 1000: 01 to 16<br>OKIFAX 2300/OF-18/OF-150: 01 to 16<br>OKIFAX 38/OF-27: 01 to 64<br>OKIFAX 2350/1050: 01 to 08<br>OKIFAX 2450: 01 to 08<br>OKIFAX 5200/5300: 01 to 08<br>OKIFAX 5500/5600: 01 to 16<br>OKIOFFICE84/OKIFAX 4500: 01 to 08 |
| 4 | Relay broadcast initiate transmission | This function automatically originates a message call via relay key station (which must be equipped with OKIFAX 2600, OF-38, OF-27 or equivalent) up to 120 locations for OKIFAX 2600 and 99 locations for OF-38 or OF-27.<br>To program relay password.<br>To enable or disable the relay report.<br><br>When auto dial code number 70 is not assigned, relay broadcast report is not transmitted. When it is assigned, relay report is transmitted to fax number assigned to auto dial code 70. |
| 5 | Polling transmission/reception | Polling TX: The documents placed on the feeder can be collected by a remote station.<br><br>Bulletin polling: A kind of polling transmission. Bulletin polling enables polling transmission many times until deleting the documents from one remote station.<br><br>Polling RX: The fax can collect documents from one remote station. |

**Table 2.9.4 (2/5) User's Initial Settings (One-touch key Program)**

| F+OT No. | Item | Specifications |
|---|---|---|
| 6 | Report printing | The report print in 6 items are as follows:<br>1. Activity report<br>2. Broadcast message confirmation report (Multi location)<br>3. Activity memory files report<br>4. Phone directory report<br>5. Configuration list without service default (Service default report if service bit sets to ON.)<br>6. Protocol dump list<br>7. Log report (Set to on Service bit)<br><br>* Refer to Reports and Lists of Chapter 1. |
| 7 | Selection of Counter display | The operation for displaying and clearing the print counters in five ways are as follows:<br><br>1. Drum counter<br>When I/D unit reaches run-out time, “CHANGE DRUM” is appeared in LCD. Under above condition, user can see the Drum message and clear. However, No. of counter is not shown for user (Service bit=OFF). After user changed the Drum and clear operation, “CHANGE DRUM” in LCD is displayed. However, the drum counter clear is possible even if the drum is not at the end of its lifespan.<br><br>2. Toner counter<br>This counter provided to serviceman to check the number of toner counter.<br>When srvice bit=OFF, this counter message is skipped.<br>When service bit=ON, this counter is cleared by operation.<br>When TF32=ON, this counter is cleared by operation without Service bit ON/OFF (TF01). (User can clear the toner counter.)<br><br>3. Drum (T) counter<br>This counter to serviceman to know the total number of DRUM counter for the machine.<br>When service bit=OFF, this counter message is skipped.<br>When service bit=ON, this counter is cleared by operation.<br><br>4. Print counter<br>This counter is provided to user.<br>Display shows how many times recording paper has been printed.<br>But user cannot clear this number.<br><br>5. Scan counter<br>This counter is provided to user.<br>Display shows how many times document has been passed the ADF.<br>But user cannot clear this number. |

**Table 2.9.4 (3/5) User's Initial Settings (One-touch key Program)**

| F+OT No. | Item | Specifications |
|---|---|---|
| 8 | Location program | |
| | 1. One-touch key | One-touch keys allow registering:<br>(1) Telephone number (numeral, -, P and space) in 32 digits.<br>(2) Alternate fax telephone number in 32 digits. (additional registration)<br>(3) ID for the telephone directory function in 15 characters (alphabetic, numeric and symbolic).<br>(4) 10 one-touch keys are provided. |
| | 2. Two-digit auto dial program | Auto-dial No. 01 to 70 allows registering telephone number in 32 digits (numeral, -, P and space) and ID for the telephone directory maximum 15 characters (alphabetic, numeric and symbolic). |
| | 3. Group setting | Grouping some one-touch keys and some two-digit auto dial codes to which telephone numbers have been assigned. Five group programming are available.<br>The group programming makes multiple polling reception and broadcast operation simple. |
| 9 | User's programs | |
| | 1. Function program | 01: MCF (SINGLE-LOC.)<br>02: MCF (MULTI-LOC.)<br>03: ERR. REPORT (MCF.)<br>04: IMAGE IN MCF.<br>05: SENDER ID<br>06: MONITOR VOLUME<br>07: BUZZER VOLUME<br>08: CLOSED NETWORK<br>09: TX MODE DEFAULT<br>10: T/F TIMER PRG.<br>11: RING RESPONSE<br>12: DISTINCTIVE RING<br>13: 1'ST PAPER SIZE<br>14: USER LANGUAGE<br>15: INCOMING RING<br>16: REMOTE RECEIVE<br>17: MEM./FEEDER SW.<br>18: POWER SAVE MODE<br>19: ECM FUNCTION<br>20: REMOTE DIAGNOSIS<br>21: PC/FAX SWITCH<br>22: NO TONER MEM RX<br>23: MEM FULL SAVE<br>24: CONTINUOUS TONE<br>25: INSTANT DIALING<br>26: RESTRICTED ACCESS<br>27: WIDTH REDUCTION<br>28: ONE TOUCH PARAMETER<br><br>Refer to Table 2.9.4 for specification of the function programs No. 01 through 28. |

**Table 2.9.4 (4/5) User's Initial Settings (One-touch key Program)**

| F+OT No. | Item | Specifications |
|---|---|---|
| | 2. Dial parameters | 1. REDIAL TRIES<br>2. REDIAL INTERVAL<br>3. DIAL TONE DETECT<br>4. BUSY TONE DETECT<br>5. MF (TONE)/DP (PULSE)<br>6. PULSE DIAL RATE<br>7. PULSE MAKE RATIO<br>8. PULSE DIAL TYPE<br>9. MF(TONE) DURATION<br>10. PBX LINE<br>11. FLASH/EARTH/NORMAL<br>12. AUTO START<br>13. DIAL PREFIX<br><br>Refer to Table 2.9.6 for specification of dial parameter settings. |
| | 3. Clock adjustment | Date and time adjustment. |
| | 4. System data program | (1) TSI/CSI (except for SUI and AUT)<br>Registration of TSI/CSI/CIG (numbers, + and space) in 20 digits.<br>TSI: Transmitting Subscriber Identification<br>CSI: Called Subscriber Identification<br>CIG: Calling Subscriber Identification<br><br>(2) SENDER ID<br>Registration of sender ID (alphabetic, numeric and symbolic) in 32 digits.<br><br>(3) CALL BACK NO.<br>Registration of telephone number for call-back message (alphabetic, numeric and symbolic) in 20 digits. |
| | 5. Personal box programming | To allow the operator (in this case, a person who wishes to assign a password to personal box) to assign a two functions to 8 personal-box.<br>(a) Confidential RX<br>(b) Bulletin Polling TX<br><br>Used with confidential RX and Bulletin polling TX and Advanced T30 protocol. Personal box setting for Bulletin poll using SEP frame and Confidential using SUB frame when remote machine has a SEP/SUB capability.<br>The box No. 0 is used for only global Bulletin Polling TX. |
| | 6. Memory password programming | Registering the password required (4-digit numerals) for outputting the data received by Memory Only Reception mode or change from Memory Only Reception mode. When the four-digit numeric password is registered. The password input is required upon outputting documents or change from Memory Only reception mode. |

**Table 2.9.4 (5/5) User's Initial Settings (One-touch key Program)**

| F+OT No. | Item | Specifications |
|---|---|---|
| | 7. FAX Network Programming | The Incorporation of the FAX2NET function requires the following registration operation:<br>1) FAX 2NET server telephone number:<br>Telephone number of the FAX2NET server to be used (Max 32 digits).<br>2) Account number:<br>ID particular to terminal registered in FAX2NET service. The user must fetch this number individually from FAX2NET. Up to 14 characters including.<br>3) International telephone prefix (10-digit max.):<br>Number required to decide whether the FAX2NET service should be started.<br><br>See Appendix I "FAX2NET Function". |
| | 8. FAX2NET Service | The following FAX2NET services are avilable.<br>1) Web Retrieval<br>Web Retrieval is a function available for a Web printing request to FAX2NET server by using a Web URL the assigned to one-touch key. The FAX2NET server facsimile-sends its data to the request source. This is performed in normal G3 communication mode.<br>2) Peyment Card Registration<br>Payment card registration is a function available for the prepaid card information to the FAX2NET server by inputting the card number from the user menu.<br><br>See Appendix I "FAX2NET Function". |
| | 9. Restrict ID programming | Restrict ID is a function available only person who knows Password, and this function can register 24 types of ID (Department No.) when Restrict Access of user's setting No. 26 is set to ON. |
| 10 | Printer cleaning | This drum cleaning function removes the residual toner on the I/D (image drum) Unit surface by printing. |

### 2)-2 Function Program

**Table 2.9.4 (1/4) User's Initial Settings (Function Program)**

| P.F. No. | Item | Specifications | Default |
|---|---|---|---|
| 01 | Message confirmation report (Single location) | Enables or disables the automatic message confirmation report printing after a single location call.<br><br>ON: Printing the MCF report.<br>OFF: Disables this function. | |
| 02 | Message confirmation report (Multiple locations) | Enables or disables the automatic message confirmation report printing after a multiple polling or broadcast.<br><br>ON: Prints the MCF report.<br>OFF: Disables this function. | |
| 03 | Error report (MCF) | Enables or disables the automatic error report printing when transmission error occurs.<br>(Excepts for service bit “0”.)<br><br>ON: Printing the error report.<br>OFF: Disables this function. | |
| 04 | Image in MCF | Enables or disables the automatic printing of the image on the first sheet below the message confirmation report.<br><br>ON: Printing the image in MCF report. (Memory transmission and if the report is printed automatically.)<br>OFF: Disables this function. | |
| 05 | Sender ID | The fax can transmit programmed alphanumeric message, such as company’s name consisting of up to 32 characters.<br>Enables or disables the sender ID function.<br>* (Outside only)<br><br>ON: Enables<br>OFF: Disables | |
| 06 | Line monitor volume | Controls the volume.<br><br>OFF/Low/High selectable. | |
| 07 | Buzzer volume | Selects the sound volume of each buzzer (end of communication buzzer, voice request buzzer and off-hook alarm) and software ringer from high, low and middle levels.<br><br>Low/Mid/High selectable.<br><br>***Note:*** Fixed a low level for key touch tone. | |

**Table 2.9.4 (2/4) User's Initial Settings (Function Program)**

| P.F. No. | Item | Specifications | Default |
|---|---|---|---|
| 08 | Closed network | The fax compares lower four digits of TSI/CSI received from remote station with fax numbers registered locally for one-touch dial and two-digits autodial.<br>If unmatched, the communication will be automatically disconnected.<br><br>OFF/RX only/TX and RX selectable.<br><br>* Prevention of direct mail or wrong number calls.<br><br>(Reference)<br>TSI: Transmitting subscriber identification<br>CSI: Called subscriber identification | |
| 09 | TX mode default | Selects automatically the mode set up when a document is loaded on the feeder.<br><br>The following combinations are selectable.<br><br>STD/NORMAL→STD/DARK→STD/LIGHT→<br>FINE/NORMAL→FINE/DARK→FINE/LIGHT→<br>EX.FINE/NORMAL→EX.FINE/DARK→<br>EX.FINE/LIGHT→PHOTO/NORMAL→<br>PHOTO/DARK→PHOTO/LIGHT→<br>STD/NORMAL→ • • • | |
| 10 | Telephone/fax automatic switchover time | Specifies the time for which the fax alerts an operator on reception of a call in the telephone/fax automatic swichover mode.<br><br>20 sec./35 sec. selectable<br><br>Refer to page 2-36 | |
| 11 | Ring response time | User can register ring response time if National code is:<br>INT'L, GBR, NOR, SWE, USA, HOL, ESP.<br>ITA, GRE or GER<br><br>Selects the ring response time.<br><br>1 ring/5/10/15/20 sec. selectable. | |
| 12 | Distinct ring | Specifies the detected distinct ring. (not available in all countries)<br><br>OFF/ON/SET selectable. | |
| 13 | 1'st cassette paper size | Selects A4, LETTER or LEGAL 13˜, LEGAL 14˜ OTHER by this function.<br>The operator must select the preferable paper size as the machine cannot detect the paper size automatically.<br><br>***Note:*** OTHER message appears when operating with MFP terminal. | |

**Table 2.9.4 (3/4) User's Initial Settings (Function Program)**

| P.F. No. | Item | Specifications | Default |
|---|---|---|---|
| 14 | User language | A choice of 2 languages for LCD and print message are available. GER, FRE etc. are displayed insted of ANOTHER.<br><br>ENGL1/ANOTHER selectable. | |
| 15 | Incoming ring | Instead of ringer circuit, software can control built-in speaker to ring sound.<br><br>To enable (ON) or disable (OFF) or distinctive ring (DRC) a software generated ring sound to indicate arrival of an incoming bell. | |
| 16 | Remote receive | This function is used to transfer a call received by an external telephone set (connected to fax) by entering two-digit MF tones if the remote receive setting is not OFF<br><br>The following combinations are selectable.<br><br>00/11/22/33/44/55/66/77/88/99/**/###/OFF selectable. | |
| 17 | Memory and feeder switch | Switches the transmission mode between the memory and feeder.<br><br>MEM. TX/FEEDER TX selectable.<br><br>***Note:*** This function becomes effective when Instant Dial of No. 25 is set to OFF. | |
| 18 | Power save mode | The power supply will be fed to all circuits of a fax machine whenever the fax goes to the operating state. The power save mode has reduced the power consumption at standby to below 0.5 W.<br><br>***Note:*** Power save mode is not available for ODA version. (including LTA, MEX)<br><br>Pre-heating time (Standby to print):<br>Approx 30 sec<br><br>Eanbles or disables power save mode<br>ON: Enables<br>OFF: Disables | |
| 19 | ECM function | Enables or disables ECM (error corection mode) communication.<br>ON: Enables<br>OFF: Disables | |
| 20 | Remote diagnosis | Enables or disables the remote diagnosis function when the machine can allow remote diagnosis from remote center.<br><br>ON: Enables<br>OFF: Disables | |

**Table 2.9.4 (4/4) User's Initial Settings (Function Program)**

| P.F. No. | Item | Specifications | Default |
|---|---|---|---|
| 21 | PC/FAX switch | To enable or disable PC interface function.<br>When PC reception is not available, for example, application is not activated on the PC or cable is missing between PC and fax etc., this setting allows to switch from PC to fax reception automatically.<br><br>ON: Automatically change to fax reception<br>OFF: No reception | |
| 22 | No toner memory reception (NO Toner MEM RX) | Enables or disables the memory reception when the fax is the toner low condition.<br><br>ON: Receives the message in the memory reception when the fax is the toner low condition. The messages are printed when toner has been newly supplied.<br>OFF: Prints the message even the remaining toner level is low or none. Print quality is not guaranteed. | |
| 23 | Memory full save (MEM Full Save) | Broadcast transmission and other features originate calls after all the document read in memory. When Memory Full occurs during reading documents and operator time out occur, all the readout data must be deleted (OFF setting) or all the data must be sent (ON setting).<br>Select either ON or OFF setting as follows:<br><br>ON: Selecting display<br>OFF: Selecting delete at all times.<br><br>***Note:*** Operator timeout means operator does not respond during 59 seconds. | |
| 24 | Continuous Tone | Setting of sounding warning tone after reception.<br><br>ON: Warning tone sounding stops by operator's STOP key pressing<br>OFF: No warning tone | |
| 25 | Instant Dialing | Setting to start reading documents upon call origination when transmitting.<br><br>ON: Dialing while document scanning<br>OFF: Dialing after document scanning | |
| 26 | Restricted Access | Restricted Access limits accessible users by setting a password beforehand. Inputting the password then enables the user's access to the machine (FAX terminal).<br><br>ON: Enables Restricted Access<br>OFF: Disables | |

**Table 2.9.4 (4/4) User's Initial Settings (Function Program)**

<table>
<tr><th>P.F. No.</th><th>Item</th><th>Specifications</th><th>Default</th></tr>
<tr><td>27</td><td>Width Reduction</td><td>This function can print characters written at the edges of a document.<br>Switches the reduction of the horizontal scanning direction.<br><br>ON: Reduction printing (216 mm to 203 mm)<br>Reduction rate is shown as below.<br>Copy
<table>
<tr><td></td><td>STD</td><td>Fine</td><td>EX Fine</td></tr>
<tr><td>A4 size</td><td>97.9%</td><td>97.5%</td><td>97.5%</td></tr>
<tr><td>Except A4 size</td><td>94.5%</td><td>95.0%</td><td>95.0%</td></tr>
</table>
Reception message
<table>
<tr><td>8 dot/mm</td><td>300 DPI</td></tr>
<tr><td>94.1%</td><td>92.6%</td></tr>
</table>
OFF: 203 mm printing</td><td></td></tr>
<tr><td>28</td><td>One-touch keys parameter</td><td>1. To assign the following features combined together as echo protection to each one-touch key.<br><br>ON: Enables<br>OFF: Disables
<table>
<tr><td>Echo Protection</td><td>OFF</td><td>ON</td></tr>
<tr><td>Protective Tone</td><td>OFF</td><td>ON</td></tr>
<tr><td>Ignoring 1st DIS</td><td>OFF</td><td>ON</td></tr>
</table>
2. High speed modem rate<br>Specifies the modem's starting speed 14.4k, 9.6k or 4.8kbps.</td><td></td></tr>
</table>

## 2.9.5 User's Functions Example

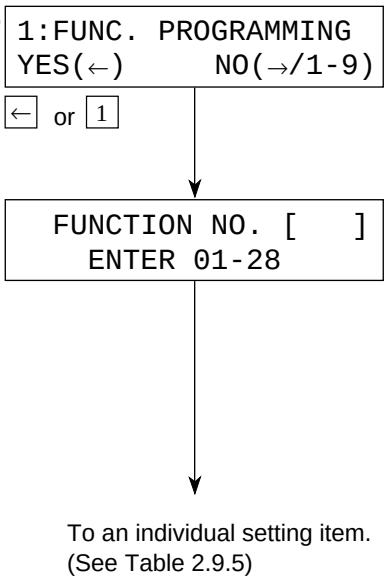
***Note***: The fonts displayed on the LCD operation panel may differ from fonts written this manual.

**1) Function Program**

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode. (In case of no message in memory)
- Press [←] key.
- Enter two-digit function number, then the display will show the set item corresponding to the number entered. If you want to set up all or several items starting with 01, then enter 01.

**The display shows:**




To an individual setting item.
(See Table 2.9.5)

**Table 2.9.5 (1/3) User's Functions**

| Tap No. | Name of Function | The Display Shows |
|---|---|---|
| 0 1 | Message confirmation report (Single location) | 01:MCF(SINGLE-LOC.)<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 0 2 | Message confirmation report (Multiple locations) | 02:MCF (MULTI-LOC.)<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 0 3 | Error report | 03:ERR. REPORT(MCF.)<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 0 4 | Image in MCF. | 04:IMAGE IN MCF.<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 0 5 | Sender ID | 05:SENDER ID<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 0 6 | Line monitor volume | 06:MONITOR VOLUME<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: OFF → LOW → HIGH |
| 0 7 | Buzzer volume | 07:BUZZER VOLUME<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: MID → HIGH → LOW |
| 0 8 | Closed network | 08:CLOSED NETWORK<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: T/R → RX → OFF |
| 0 9 | TX mode default | 09:TX MODE DEFAULT<br>YES(←) NO(→)<br>→ Setting<br>RESOLUTION & ORIGINAL<br>NOTE 1: |
| 1 0 | Telephone/fax automatic switchover timer | 10:T/F TIMER PRG.<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: 20SEC ⇆ 35SEC |
| 1 1 | Ring response time | 11:RING RESPONSE<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: 1RING → 05SEC → 10SEC → 15SEC → 20SEC<br>NOTE 2: |
| 1 2 | Distinctive ring | 12:DISTINCTIVE RING<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X:OFF → ON → SET<br>NOTE 2: |

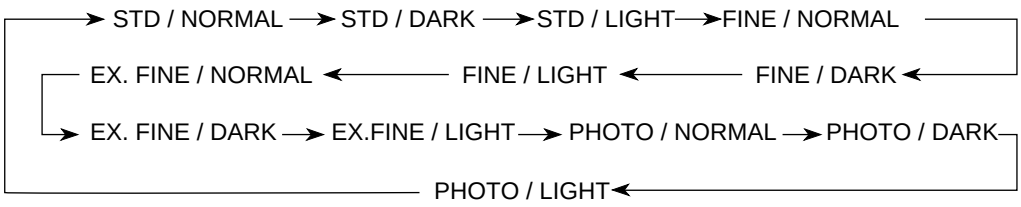
**Table 2.9.5 (2/3) User's Functions**

| Tap No. | Name of Function | The Display Shows |
|---|---|---|
| 1 3 | 1st cassette paper size | 13:1'ST PAPER SIZE<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: A4 → LET → LGL 13 → LGL 14 → OTHER → A4 |
| 1 4 | User language | 14:USER LANGUAGE<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: ENG. ⇆ (Other) |
| 1 5 | Incoming ring | 15:INCOMING RING<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF → ON → DRC → OFF |
| 1 6 | Remote receive | 16:REMOTE RECEIVE<br>[ X ] YES(←) NO(→)<br>OFF → 00 → 11 → 22 → 33 → 44 → 55 → 77 → 88 → 99 → ## → ** → OFF |
| 1 7 | Memory and feeder selection | 17:MEM/FEEDER SW.<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: MEM. ⇆ FEED. |
| 1 8 | Power save mode (not available for ODA version) | 18:POWER SAVE MODE<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 1 9 | ECM function | 19:ECM FUNCTION<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 0 | Remote diagnosis | 20:REMOTE DIAGNOSIS<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 1 | PC/FAX switch | 21:PC/FAX SWITCH<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |

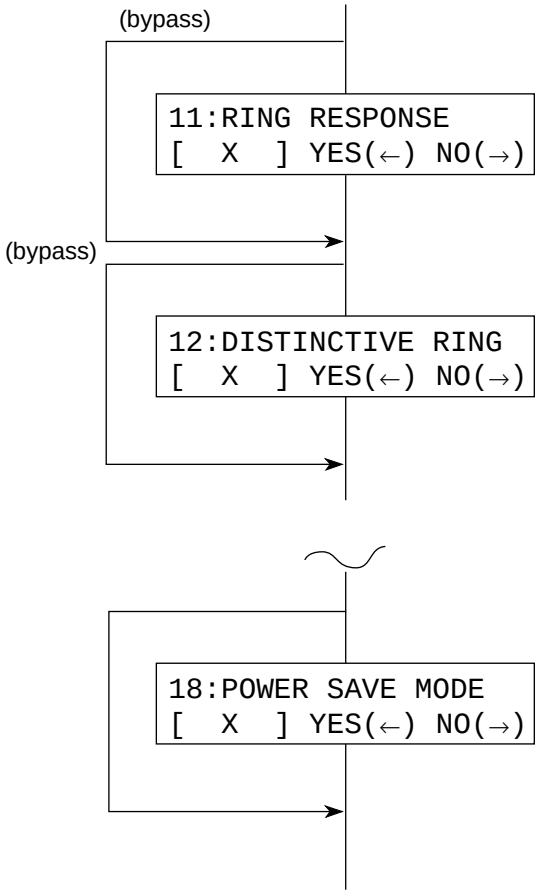
**Table 2.9.5 (3/3) User's Functions**

| Tap No. | Name of Function | The Display Shows |
|---|---|---|
| 2 2 | No toner memory reception | 22:NO TONER MEM. RX<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 3 | Memory full save | 23:MEM FULL SAVE<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 4 | Continuous tone | 24:CONTINUOUS TONE<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 5 | Instant dialing | 25:INSTANT DIALING<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 6 | Restricted access | 26:RESTRICT ACCESS<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 7 | Width reduction | 27:WIDTH REDUCTION<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON |
| 2 8 | One-touch key parameters | 28:ONE TOUCH PARAM.<br>YES(OT) NO(→)<br>→ To: FUNCTION NO.<br>One-touch key pressed.<br>ECHO PROTECTION<br>[ X ] YES(←) NO(→)<br>→ Setting (Toggle)<br>X: OFF ⇆ ON<br>←<br>FAX SPEED<br>[ X ] YES(←) NO(→)<br>→ Setting<br>X: 4.8k → 9.6k → 14.4k<br>← |

***Note1:*** RESOLUTION & ORIGINAL of Tx mode defult setting can be selected by using [→] key.




***Note2:*** When the service bit is set to "off" and the corresponding bit of XPARA of national code is set to "off", Ring response and/or Distinctive ring is bypassesd as follows:

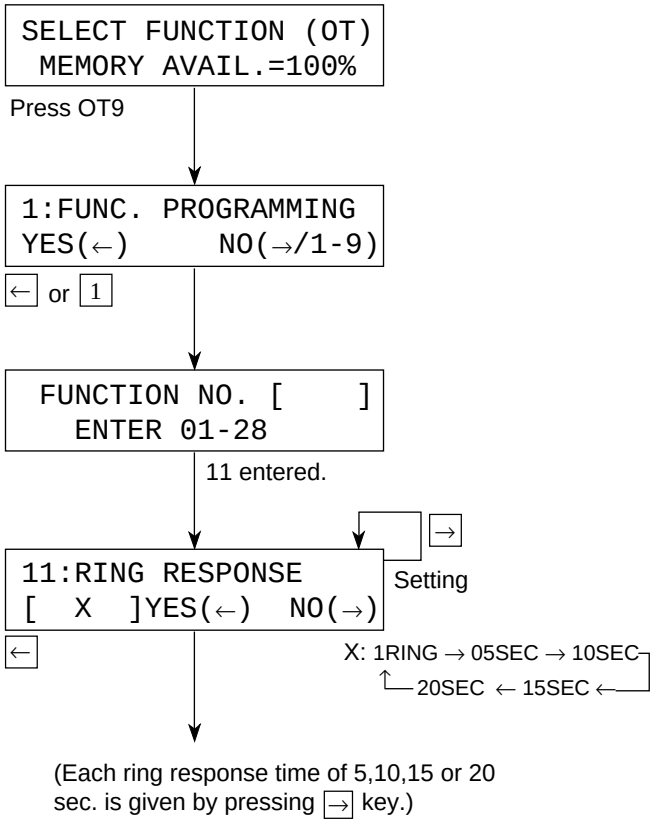


**2) Ring response time**

Before specifying the ring response time, set the service bit on following the operations shown in 2.9.3 (1). (Service Bit Setting).

**Operations:** **The display shows:**

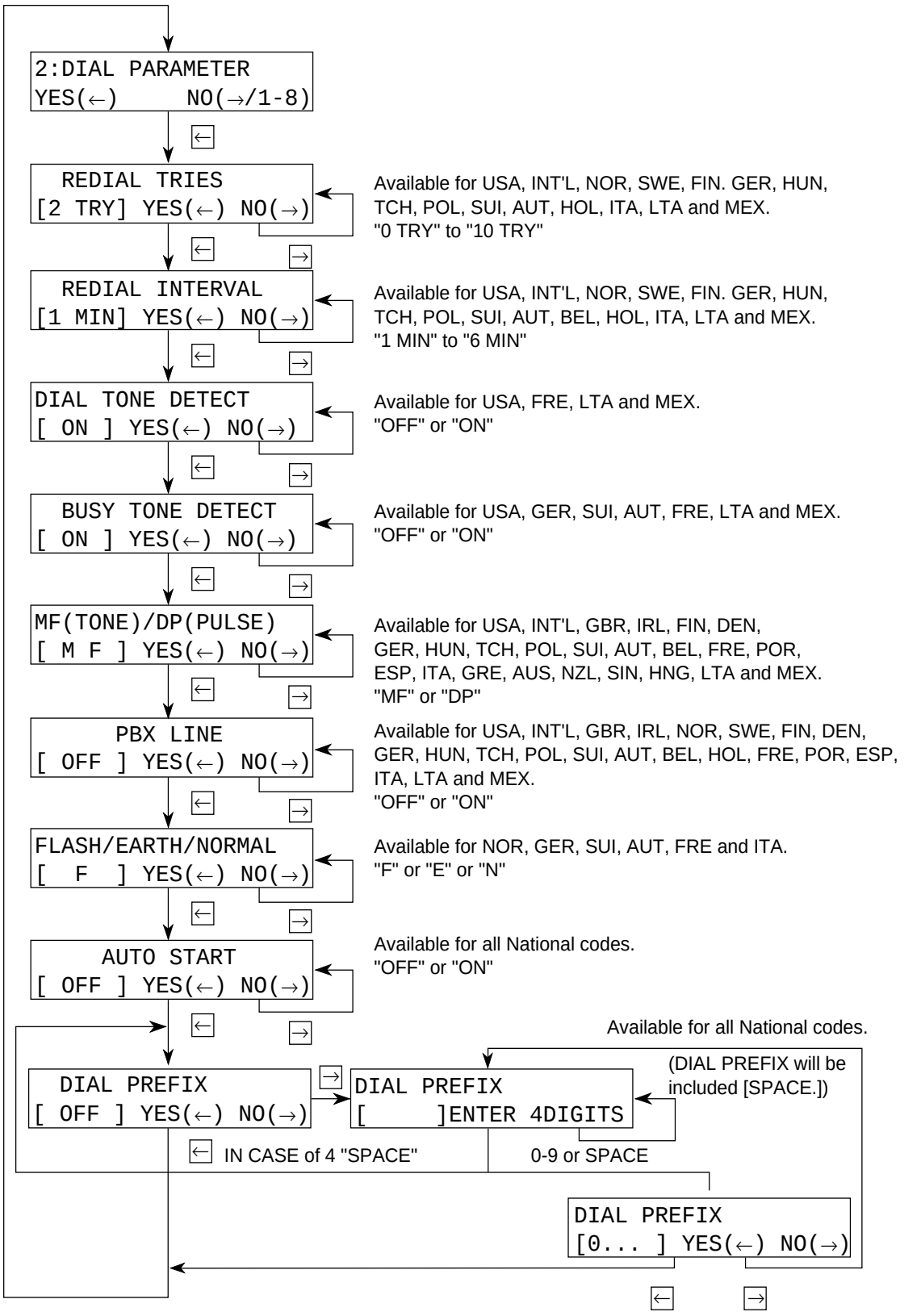
- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode. (In case of no message in memory)
- Press [←] key enter using the ten-key pad.
- Enter 11 using the ten-key pad.
- Press [→] key until the setting you want is displayed, then press [←] key.




(Each ring response time of 5,10,15 or 20 sec. is given by pressing [→] key.)

**3) Dial parameters** (In case the service bit is "OFF".)

To get the "DIAL PARAMETER" message on the display, perform the same operetion as Table 2.9.6.
(Dial parammeters settings).


2:DIAL PARAMETER
YES(←) NO(→/1-8)
REDIAL TRIES
[2 TRY] YES(←) NO(→)
Available for USA, INT'L, NOR, SWE, FIN. GER, HUN, TCH, POL, SUI, AUT, HOL, ITA, LTA and MEX.
"0 TRY" to "10 TRY"
REDIAL INTERVAL
[1 MIN] YES(←) NO(→)
Available for USA, INT'L, NOR, SWE, FIN. GER, HUN, TCH, POL, SUI, AUT, BEL, HOL, ITA, LTA and MEX.
"1 MIN" to "6 MIN"
DIAL TONE DETECT
[ ON ] YES(←) NO(→)
Available for USA, FRE, LTA and MEX.
"OFF" or "ON"
BUSY TONE DETECT
[ ON ] YES(←) NO(→)
Available for USA, GER, SUI, AUT, FRE, LTA and MEX.
"OFF" or "ON"
MF(TONE)/DP(PULSE)
[ M F ] YES(←) NO(→)
Available for USA, INT'L, GBR, IRL, FIN, DEN, GER, HUN, TCH, POL, SUI, AUT, BEL, FRE, POR, ESP, ITA, GRE, AUS, NZL, SIN, HNG, LTA and MEX.
"MF" or "DP"
PBX LINE
[ OFF ] YES(←) NO(→)
Available for USA, INT'L, GBR, IRL, NOR, SWE, FIN, DEN, GER, HUN, TCH, POL, SUI, AUT, BEL, HOL, FRE, POR, ESP, ITA, LTA and MEX.
"OFF" or "ON"
FLASH/EARTH/NORMAL
[ F ] YES(←) NO(→)
Available for NOR, GER, SUI, AUT, FRE and ITA.
"F" or "E" or "N"
AUTO START
[ OFF ] YES(←) NO(→)
Available for all National codes.
"OFF" or "ON"
Available for all National codes.
DIAL PREFIX
[ OFF ] YES(←) NO(→)
DIAL PREFIX
[ ]ENTER 4DIGITS
(DIAL PREFIX will be included [SPACE.])
IN CASE of 4 "SPACE"
0-9 or SPACE
DIAL PREFIX
[0... ] YES(←) NO(→)

The following table can be set depending on the National codes even if the service bit is "off".

**Table 2.9.10 Dial parameters setting if the service bit "OFF"**

| NATIONAL CODE | USA | INT'L | GBR | IRL | NOR | SWE | FIN | DEN | GER | HUN | TCH | POL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Redial tries | ○ | ○ | | | ○ | ○ | ○ | | ○ | ○ | ○ | ○ |
| Redial interval | ○ | ○ | | | ○ | ○ | ○ | | ○ | ○ | ○ | ○ |
| Dial tone detect | ○ | | | | | | | | | | | |
| Busy tone detect | ○ | | | | | | | | ○ | | | |
| MF/DP | ○ | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ | ○ | ○ |
| Pulse dial rate | | | | | | | | | | | | |
| Pulse make ratio | | | | | | | | | | | | |
| Pulse dial type | | | | | | | | | | | | |
| MF duration | | | | | | | | | | | | |
| PBX line | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Flash/Earth/Normal | | | | | ○ | | | | ○ | | | |
| Auto start | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Dial | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| NATIONAL CODE | SUI | AUT | BEL | HOL | FRE | POR | ESP | ITA | GRE | AUS | NZL | SIN | HNG | LTA | MEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Redial tries | ○ | ○ | | ○ | | | | ○ | | | | | | ○ | ○ |
| Redial interval | ○ | ○ | ○ | ○ | | | | ○ | | | | | | ○ | ○ |
| Dial tone detect | | | | | ○ | | | | | | | | | ○ | ○ |
| Busy tone detect | ○ | ○ | | | ○ | | | | | | | | | ○ | ○ |
| MF/DP | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Pulse dial rate | | | | | | | | | | | | | | | |
| Pulse make ratio | | | | | | | | | | | | | | | |
| Pulse dial type | | | | | | | | | | | | | | | |
| MF duration | | | | | | | | | | | | | | | |
| PBX line | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | ○ |
| Flash/Earth/Normal | ○ | ○ | | | ○ | | | ○ | | | | | | | |
| Auto start | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Dial | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

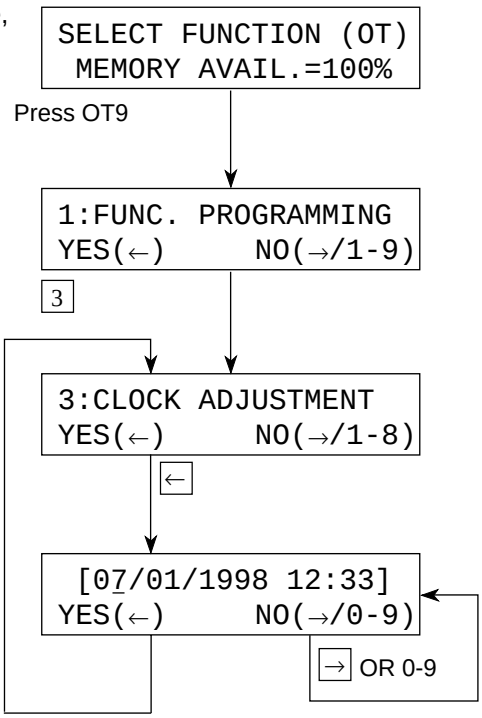
***Note:*** The blank in the table is not indicated on the LCD.

### 2.9.6 Clock Adjustment

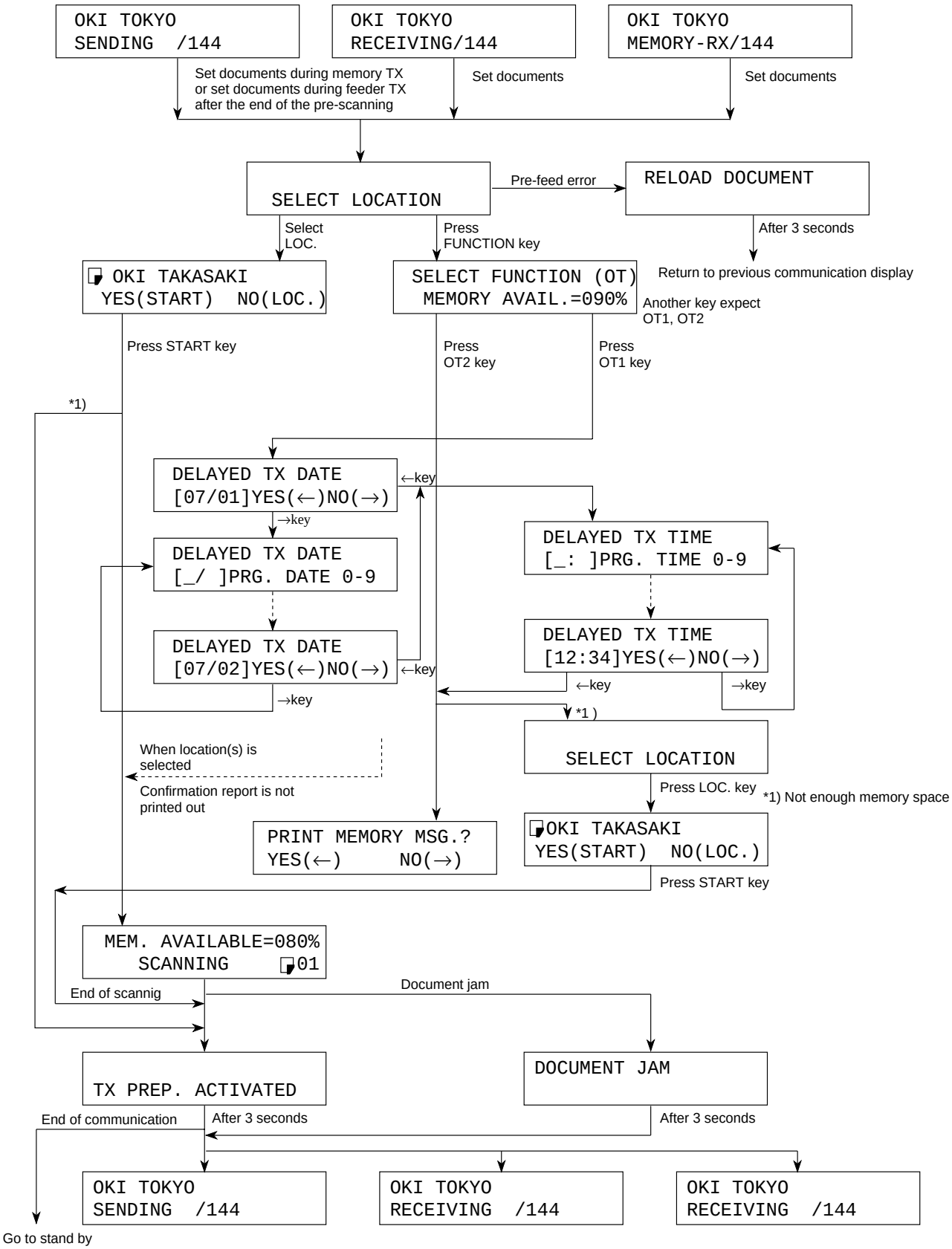
**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode. (In case of no message in memory)
- Enter 3 using the ten-key pad.
- Press ← key.
- Enter date and time by using the ten-key pad (0 to 9 keys).

**The display shows:**



## 2.9.7 Dual Access Operation



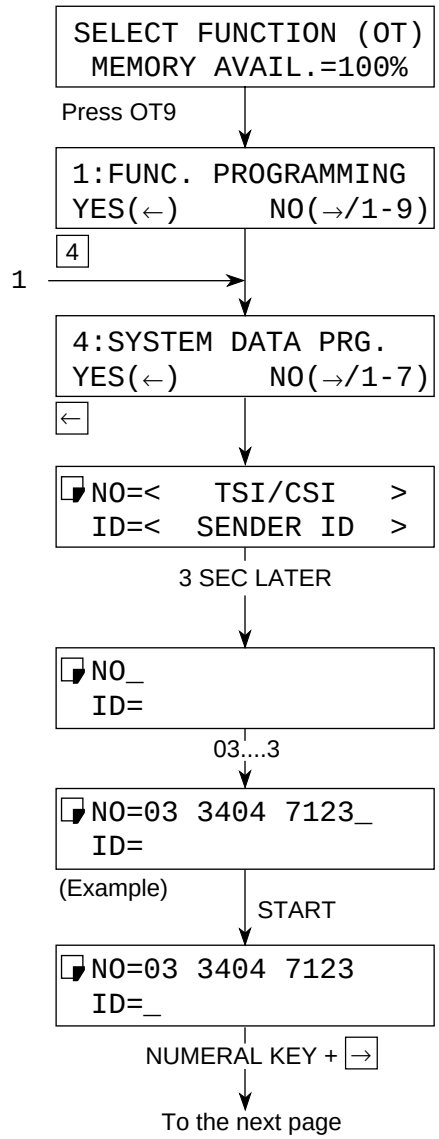
## 2.9.8 System Data Programming

- TSI/CSI (Defalut: Blank)
- Registration of sender ID (Defalut: Blank)
- Registration of telephone number for the call-back message (Defalut: Blank)

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode.
  (In case of no message in memory)
- Enter 4 using the ten-key pad.
- Press [←] key.

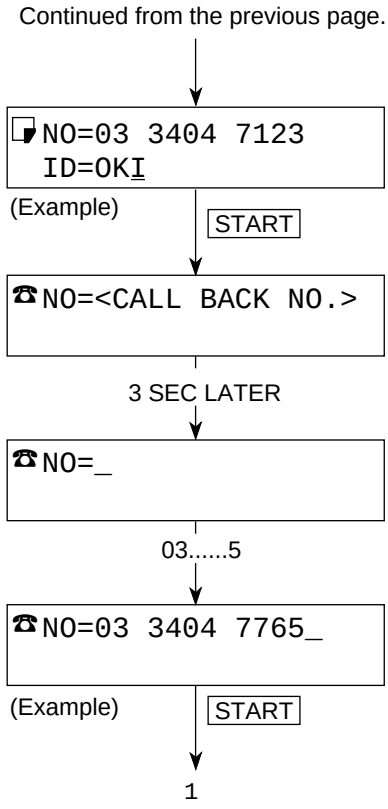
**The display shows:**




***Note:*** Use the UNIQUE key to input special symbols.

**Operations:**

**The display shows:**




- Press START key.

- Press START key.

## 2.9.9 Dial Parameters Settings

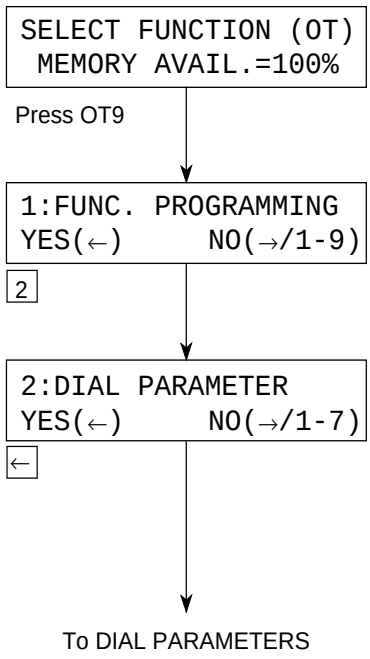
(1) Procedure

The following shows the case in which the service bit is on.

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 9 in the standby mode. (In case of no message in memory)
- Enter 2 using the ten-key pad.
- Press [←] key.

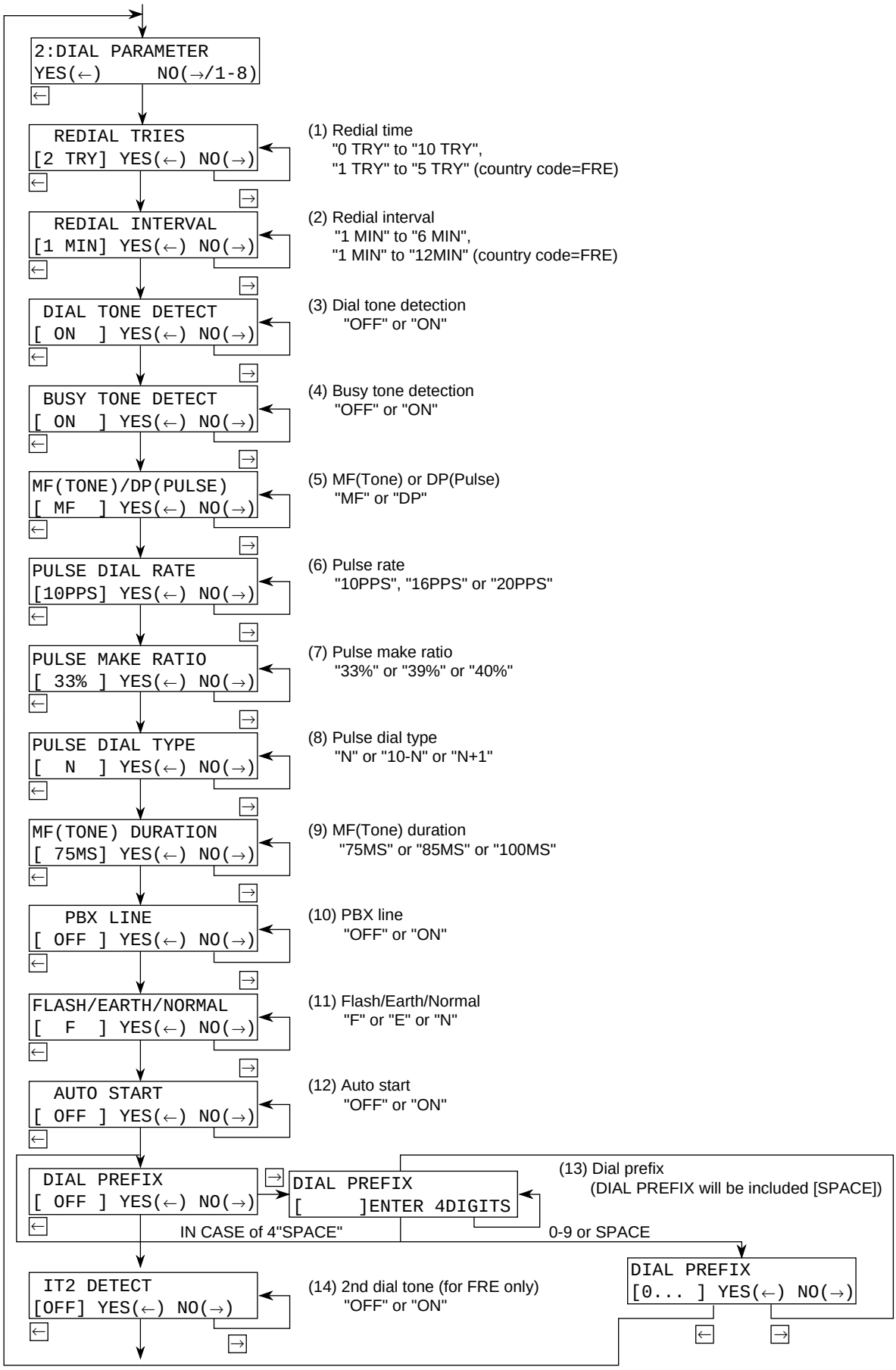
**The display shows:**




*1 Not all of the following dial parameters are released to the users (depending on National codes and if the Service bit is OFF)

## The display shows:

Continued from the previous page.



(2) Purpose

**Table 2.9.11 Default Settings of Dial Parameters**

| No. | User Setting Items | Setting Selection | COUNTRY CODE | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 USA | 2 INT'L | 3 GBR | 4 IRL | 5 NOR | 6 SWE | 7 FIN | 8 DEN | 9 GER | 10 HUN | 11 TCH | 12 POL | 13 SUI | 14 AUT | 15 BEL | 16 HOL | 17 FRE | 18 POR | 19 ESP | 20 ITA | 21 GRE | 22 AUS | 23 NZL | 24 SIN | 25 HNG | 26 LTA | 27 MEX |
| 1 | REDIAL TRIES | 0 - 10 TRIES | 3 | 3 | 2 | 2 | 5 | 10 | 3 | 5 | 10 | 10 | 2 | 2 | 10 | 10 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 5 | 2 | 3 | 3 |
| 2 | REDIAL INTERVAL | 1 - 6 min | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 3 | DIAL TONE DETECT | ON/OFF | OFF | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | ON | ON | ON | ON | ON | ON | OFF | OFF |
| 4 | BUSY TONE DETECT | ON/OFF | ON | ON | ON | OFF | ON | ON | ON | ON | ON | OFF | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON |
| 5 | MF (TONE)/DP (PULSE) | DP/MF | MF | MF | MF | MF | MF | MF | MF | MF | DP | DP | MF | DP | MF | DP | MF | MF | MF | DP | MF | MF | MF | MF | MF | MF | MF | MF | MF |
| 6 | PULSE DIAL RATE | 10 PPS/16 PPS/ 20 PPS | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 7 | PULSE MAKE RATIO | 33%/39% | 39% | 33% | 33% | 33% | 33% | 39% | 39% | 39% | 40% | 33% | 39% | 33% | 40% | 40% | 33% | 39% | 33% | 33% | 33% | 39% | 39% | 33% | 33% | 33% | 33% | 39% | 39% |
| 8 | PULSE DIAL TYPE | N/10-N/N+1 | N | N | N | N | N | N+1 | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | 10-N | N | N | N | N |
| 9 | MF (TONE) DURATION | 75 ms/85 ms/100 ms | 100 | 85 | 85 | 85 | 75 | 85 | 85 | 100 | 85 | 100 | 100 | 100 | 85 | 85 | 85 | 100 | 75 | 85 | 85 | 85 | 100 | 85 | 85 | 85 | 85 | 100 | 100 |
| 10 | PBX LINE | ON/OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 11 | FLASH/EARTH/NORMAL | NORMAL/FLASH/ EARTH | N | N | N | N | N | N | N | N | EARTH | N | N | N | FLASH | EARTH | N | N | FLASH | N | N | N | N | N | N | N | N | N | N |
| 12 | AUTO START | ON/OFF | ON | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | OFF | OFF | ON | ON | OFF | OFF | OFF | ON | ON | ON | OFF | ON | ON | ON | ON | ON | ON |
| 13 | DIAL PREFIX | OFF/(max. 4 digits) | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | 0... | OFF | OFF | OFF | 0... | 0... | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF | OFF |

Note: User settings are possible for items without mesh (Meshed items are displayed at service bit=ON.)
The contents of tables are subject to change by the requests of OEM comanies and customers without notice.

**Table 2.9.6 Dial Parameters Settings**

| No. | Item | Specifications |
|---|---|---|
| | **Dial parameters** | |
| 01 | Redial tries | Switches on the re-dial times to meet the regulations of the installed country. 0 to 10 tries (in one-try steps)<br>1 to 5 tries for FRE. |
| 02 | Redial interval | Switches on the re-dial intervals to meet the regulations of installed country. 1 to 6 minutes (in one-minute steps)<br>1 to 12 minutes for FRE. |
| 03 | Dial tone detect | Selects the dial tone detection.<br>ON/OFF selectable.<br>ON: Enable<br>OFF: Disable |
| 04 | Busy tone detect | Selects the busy tone detection.<br>ON/OFF selectable.<br>ON: Enable<br>OFF: Disable |
| 05 | MF (TONE) or DP (Pulse) | Selects dialling by multi-frequency or dial pulse. |
| 06 | Pulse dial rate | Selects the dialling pulse rates for the line.<br>10 pps/16 pps/20 pps selectable. |
| 07 | Pulse make ratio | Selects pulse dial rate.<br>33%/39%/40% GER, SUI, AUT = 40% |
| 08 | Pulse dial type | Selects pulse dial type.<br>Normal(N)/10-N/N+1 |
| 09 | MF (Tone) duration | Selects MF (Tone) duration.<br>75/85/100 ms selectable. |
| 10 | PBX line | Selects PBX line.<br>ON/OFF selectable.<br>ON: PBX line<br>OFF: PSTN |
| 11 | Flash/Earth/Normal | Selects the PBX type to meet the exchange requirements.<br>NORMAL/EARTH/FLASH selectable.<br>(PBX line origination types) |
| 12 | Auto start | Enables or disables the function of dialing without pressing the START key in one-touch dial and 2-digit auto dial modes.<br>ON: Enable<br>OFF: Disable |
| 13 | Access digit | Prefix dialing digits with which PBX connects the fax to the public line.<br>OFF/max. 4digit(s) selectable.<br>Digit: Enable<br>OFF: Disable |
| 14 | IT2 detect (FRE only) | Selects 2nd dial tone detection ON/OFF selectable. (FRE only)<br>ON: Enable<br>OFF: Disable |

## 2.9.10 Off-line Tests

(1) Purpose

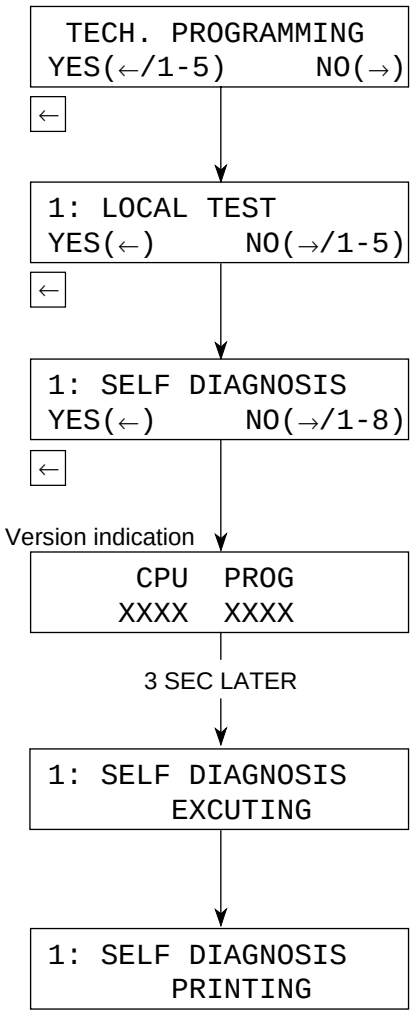
Activate self-diagnosis which includes:
- Print test
- CPU-ROM version printing
- CPU-RAM check
- PROG version printing
- LANGUAGE version printing
- DEFAULT version printing
- RAM check
- RAM check (memory board: optional)

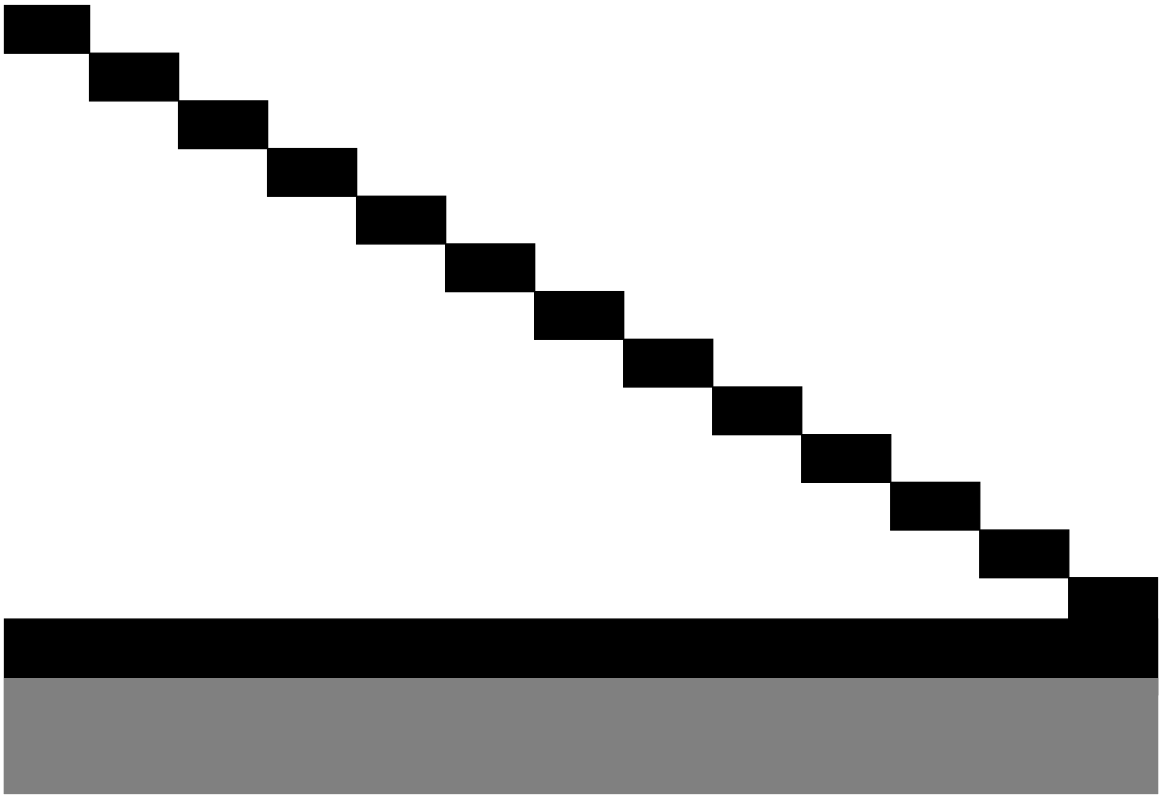
(2) Procedure

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in memory)
- Press [←] key.
- Press [←] key.
- Press [←] key for cheking and test printing. (An example of printed data is shown in Figure 2.9.4)

**The display shows:**





```
   CPU-ROM  VERSION  AA00
            HASH     OK   DACD
   CPU-RAM           OK
   PROG     VERSION  AA00
            HASH     OK   3142

   LANGUAGE VERSION  LL10
            HASH     OK   3F06
   DEFAULT  VERSION  DD10
            HASH     OK   A683
*1 RAM1              2.5M OK
*2 RAM2              OK
   DEFAULT TYPE      01   07/01/1998 10:30


*1 marked item is shown for condition of all RAM except EXCEED RAM.
*2 marked item is shown to SRAM for EXCEED.
```

**Fig. 2.9.4 Printed Data of Self-diagnosis Print Test (Example)**

## 2.9.11 On-line Tests

### 1. Transmission

(1) Load documents

(2) Make sure that

- The loaded documents are fed in automatically.
- The STD and NORMAL lamps light.
- The display shows SELECT LOCATION.

(3) Dial the telephone number of the remote machine by the ten-key pad.

(4) Make sure that the telephone number of the remote machine is shown on the display.

(5) Press the START button.

(6) Typical message transmission flow is described in Figure 2.9.5.

### 2. Reception

(1) Use another machine for dialling.

(2) Make sure that

- The display shows AUTO REC.  START.
- The message is automatically received.

(3) Typical message reception flow is described in Figure 2.9.6.

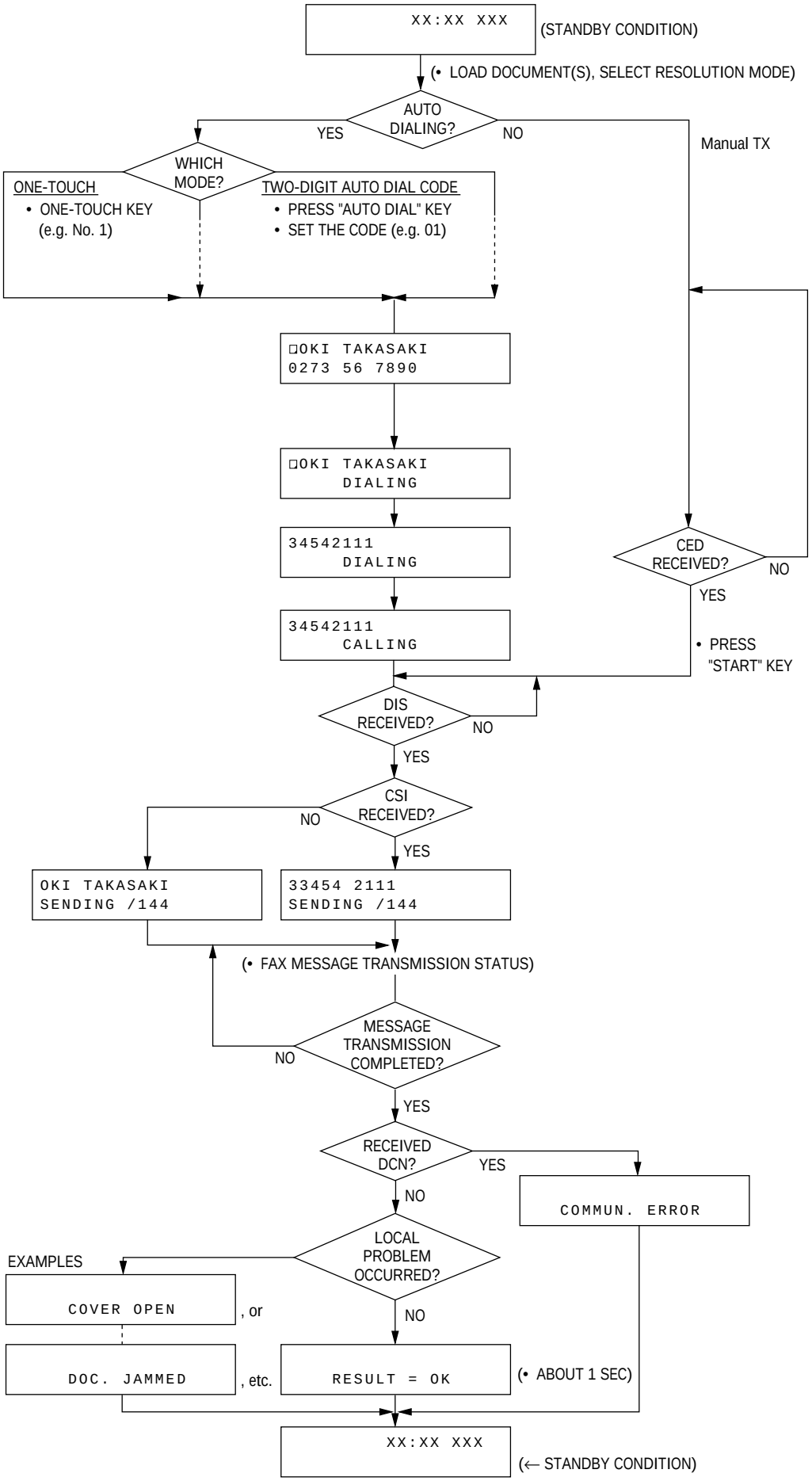



**Fig. 2.9.5 Typical Transmission Flow**

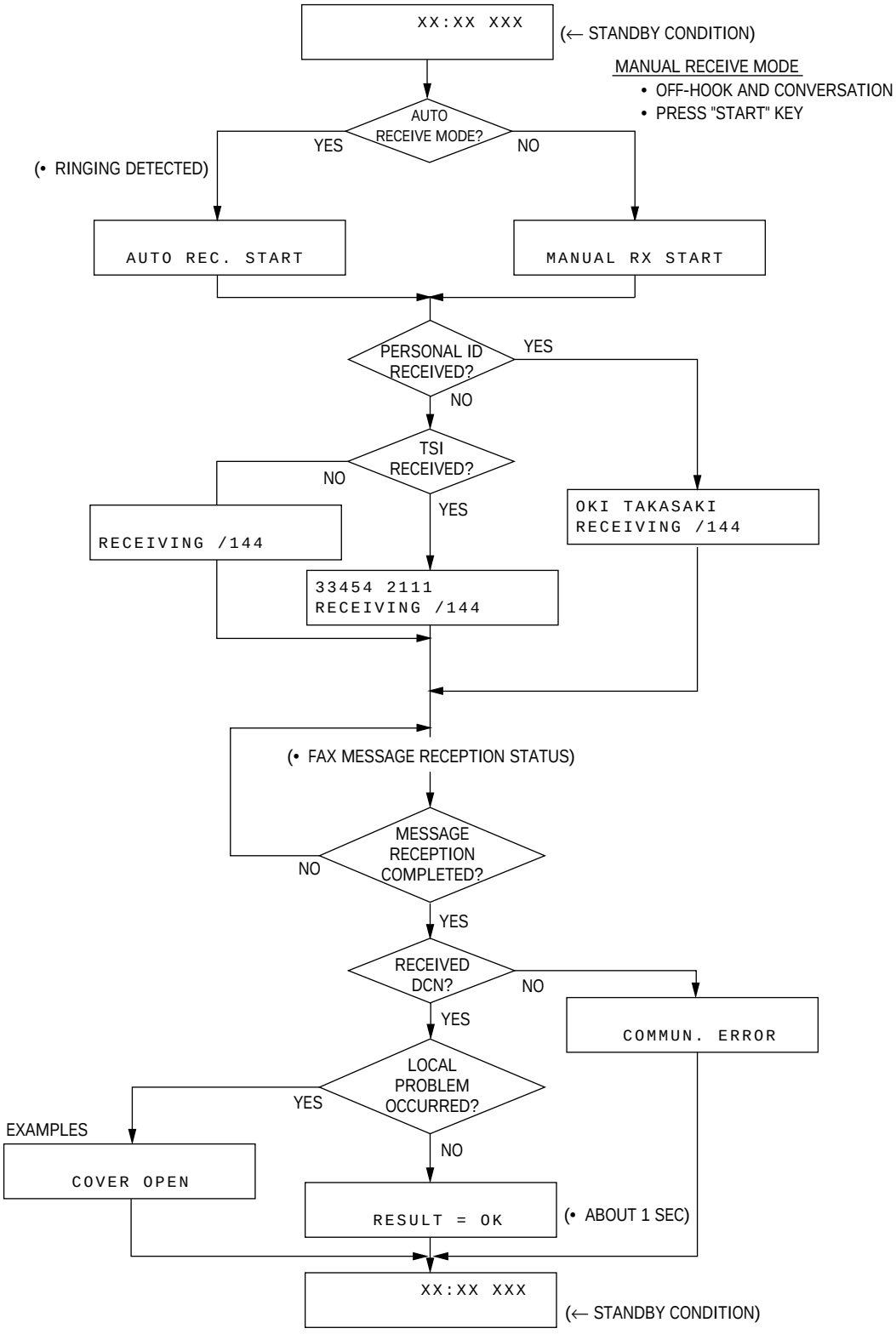
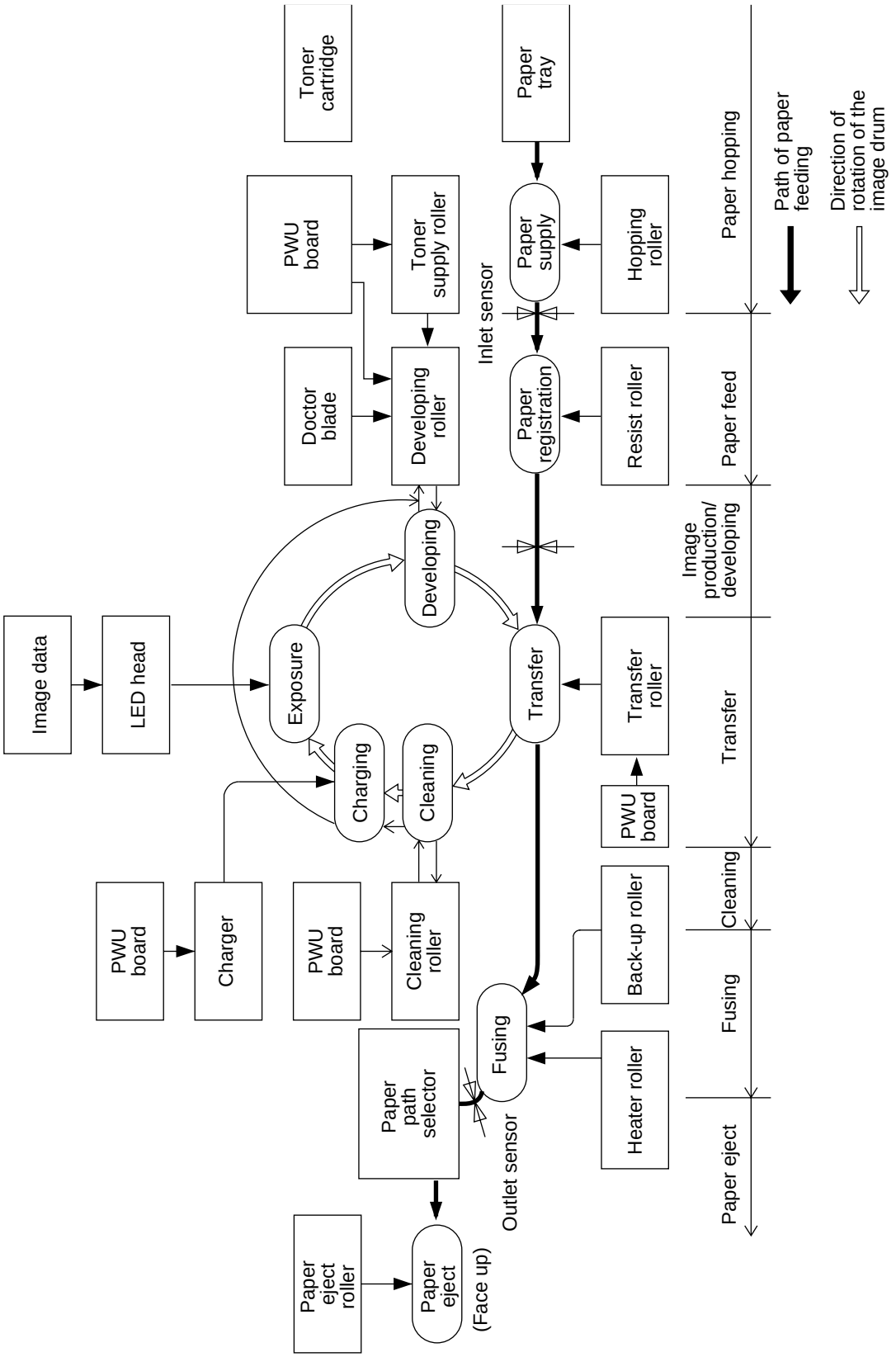



**Fig. 2.9.6 Typical Reception Flow**

# *CHAPTER 3*

# *BRIEF TECHNICAL DESCRIPTION*

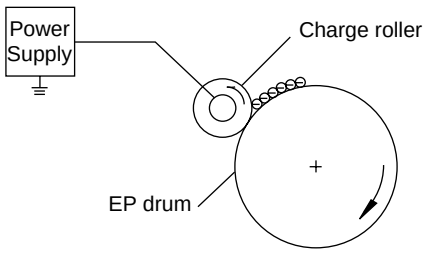
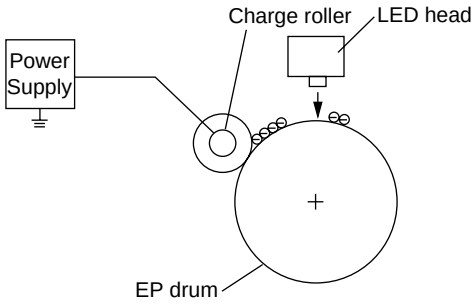
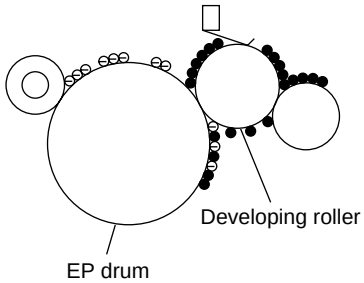


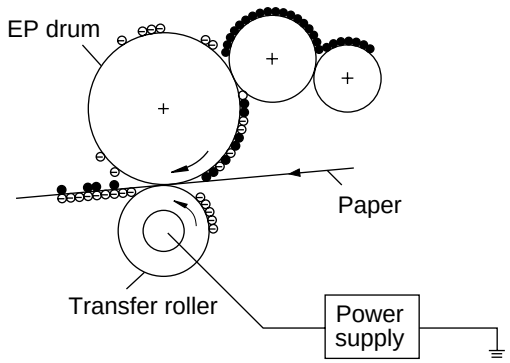
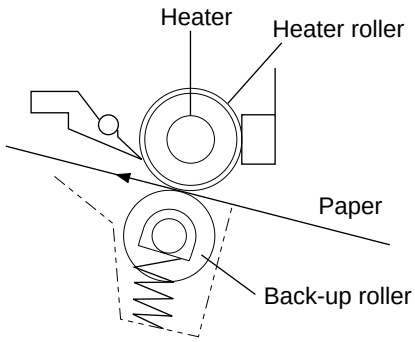
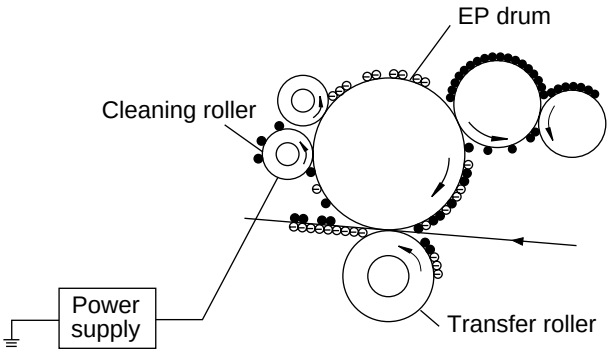

**Electro-photographic Process Flow**

## 3.1 Fundamentals of the Electro-Photographic Process

The electro-photographic process involves six sub-processes:
(1) Charging (2) Exposure (3) Development (4) Transfer (5) Fusing (6) Cleaning

Outline of each process is explained below.

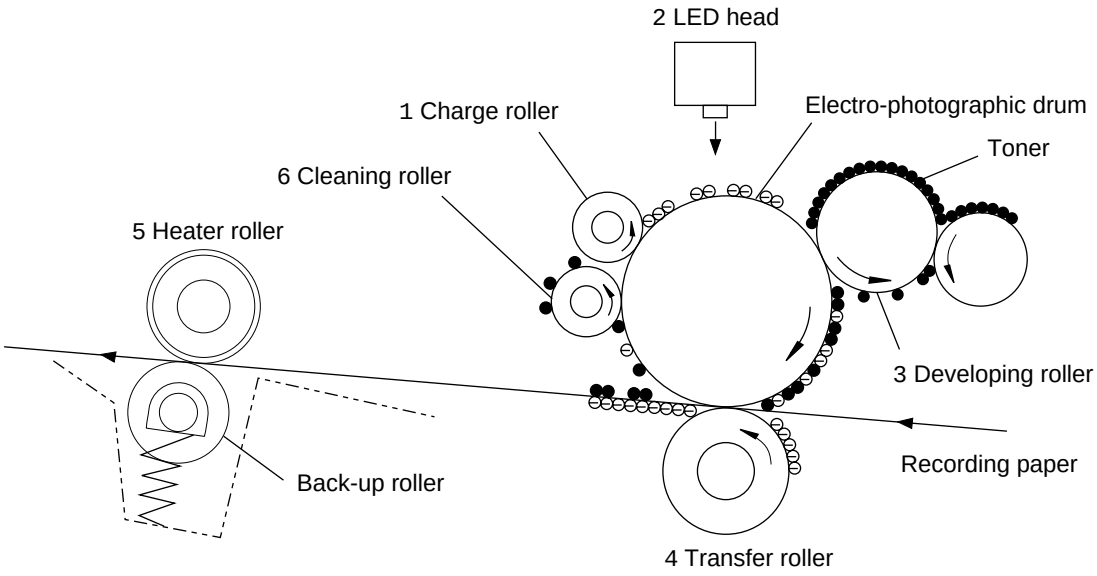
| Process | Illustration | Description |
|---|---|---|
| 1 Charging |  | The surface of the electro-photographic Image drum is uniformly charged with negative charges by applying a negative voltage to the charge roller.<br><br>When the applied DC voltage exceeds a threshold value, charging of the drum begins. |
| 2 Exposure |  | Light emitted from the LED head irradiates the negatively charged surface.<br>The potential of the irradiated part of the Image drum surface is raised, so that an electrostatic latent image associated with the print image is formed. |
| 3 Development |  | Toner is attracted to the exposed part (high-potential part) of the Image drum at the contact between the Image drum and the developing roller, making the electrostatic latent image visible.<br><br>At the same time, the residual toner on the Image drum is attracted to the developing roller by static electricity. |

| Process | Illustration | Description |
|---|---|---|
| 4<br>Transfer |  | The recording paper is placed over the Image drum surface and a positive charge, opposite in polarity to the toner, is applied to the reverse side of the paper from the transfer roller. The toner is attracted by the positive charge and is transferred to the paper. The toner charged negative that is attracted to the Image drum surface is transferred to the upper side of the recording paper by the positive charge on the lower side of the paper. |
| 5<br>Fusing |  | The unfused toner image is fused on the paper under heat and pressure as it passes between the heater roller and the back-up roller. |
| 6<br>Cleaning |  | Residual toner on the Image drum is attracted to the cleaning roller temporarily by static electricity on the Image drum surface. |

## 3.2 Actual Electo-photographic Process

The electro-photographic process consists of six essential processes.

The following Figure 3.2.1 provides a general description.




* Process:

1 : Charging
2 : Exposure
3 : Developing
4 : Transfer
5 : Fusing
6 : Cleaning

**Figure 3.2.1 Actual EP Process**

## 3.3 Boards and Units

### 3.3.1 Boards and Units

The following one board, Main control board and three units constitute the facsimile transceiver machine.

| | | |
|---|---|---|
| • Main control board | MCNT: | (R51) |
| • Network control unit board | NCU: | (UNC; WN5, DN5; FN5) |
| • Operation panel assembly unit | OPE: | (O4W) |
| • Power supply unit | POW UNIT: | (MPW1446; 230V/MPW1546; 120V, P2H, P6L) |
| • Printer unit | | |

Figure 3.3.1 shows the related drawing of the facsimile transceiver.

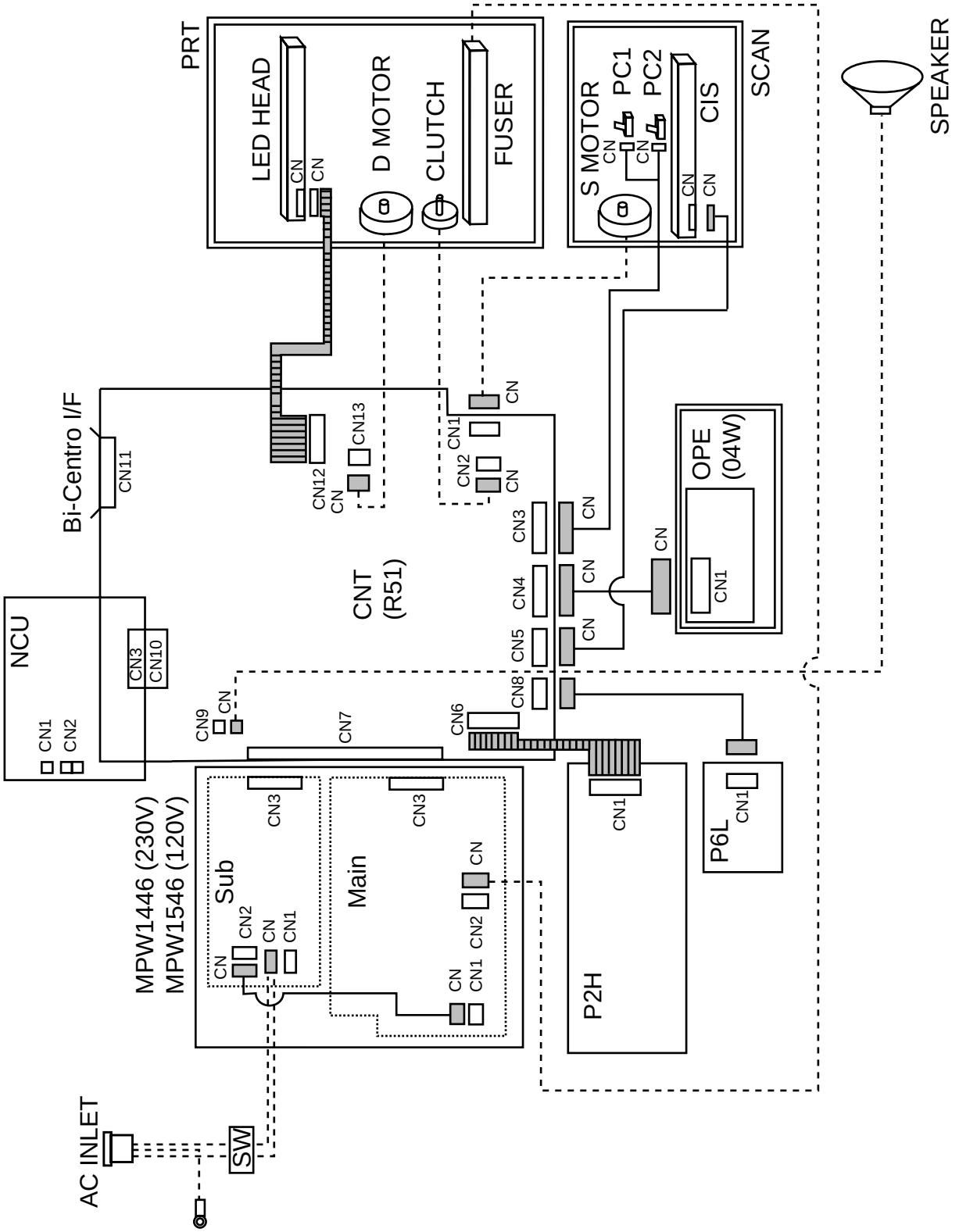



**Figure 3.3.1 Related Drawing**

## 3.4 Overall Dimension and Mechanical Structure of OKIOFFICE84/OKIFAX 4500

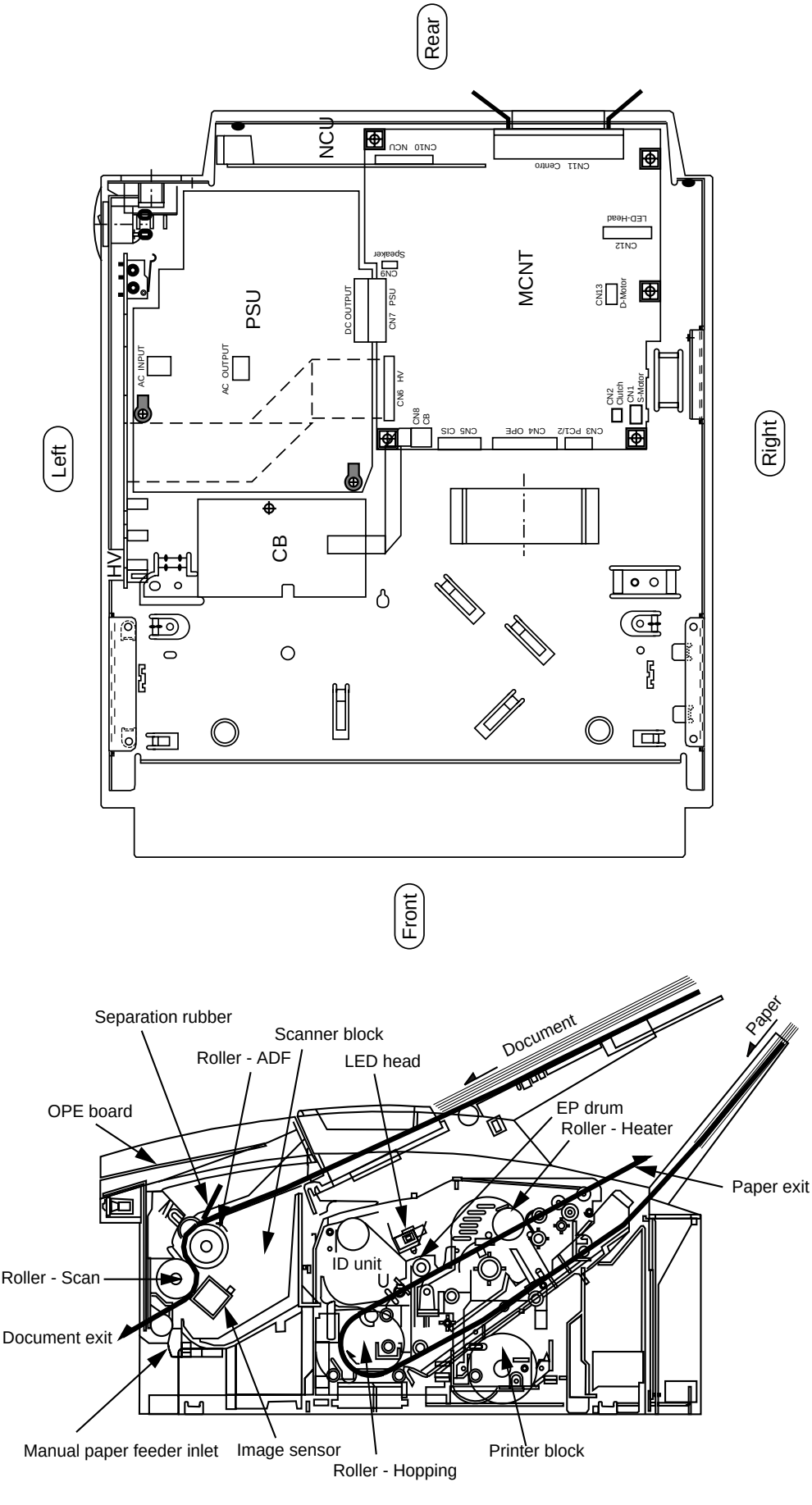



**Figure 3.4.1 Overall Dimension and Mechanical Structure**

# *CHAPTER 4*

# *MECHANICAL DISASSEMBLY AND REASSEMBLY*

This chapter explains the procedures for replacement of assemblies and units in the field.

# 4. General

## 4.1 Precautions for Parts Replacement

(1) Before starting disassembly and reassembly, always turn the AC power switch OFF, and pull out the AC plug.

***Note:*** Unplug the AC power cord from the wall outlet first and then from the facsimile.

(2) Do not try to disassemble as long as the facsimile is operating normally.

(3) Do not remove unnecessary parts: Try to keep disassembly to a minimum.

(4) When disassembling, follow the prescribed sequence. Otherwise, parts may be damaged.

(5) Since screws and small parts are likely to be lost, they should temporarily be attached to their original positions.

(6) When handling items such as printed circuit boards, do not wear gloves that are likely to generate static electricity.

(7) Using a wrist band connected to the ground will protect semiconductors on printed circuit boards from damage by the static electricity.

(8) Do not place printed circuit boards directly on the equipment or on the floor.

| | Board or Part | Adjustment |
|---|---|---|
| (a) | NCU board | DIP switches to be placed in the same position as on the removed board. Refer to Chapter 8. |

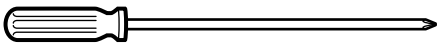
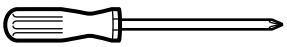
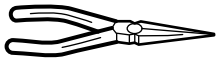
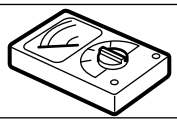
***Note:*** The DIP switches setting is subject to change by PTT parameters.
WN5, DN5 and FN5 board (Except for USA/Canada version)

| | | |
|---|---|---|
| (b) | LED print head | When the rank marking of the replaced LED print head (new part) is the same as that of the used LED print head (old part), you do not always have to set the LED print head strobe time by the technical function No. 26. (Refer to Chapter 5) and the LED print head width by the technical function No. 27 (Refer to table 2.9.1). |

## 4.2 Tools

Table 4.1 shows the tools required for the replacement of parts such as circuit boards and mechanical units.

**Table 4.1 Tools**

| No. | Service tools | | Q'ty | Remarks |
|---|---|---|---|---|
| 1 |  | Philips screw driver (L) | 1 | |
| 2 |  | Philips screw driver (M) | 1 | |
| 3 |  | Flat screw drivers (S) | 1 | |
| 4 |  | Philips screw driver (S) | 1 | |
| 5 |  | Radio pliers | 1 | |
| 6 |  | Nippers | 1 | |
| 7 |  | Multimeter | 1 | Short-ciucuit test |

## 4.3 How to Disassemble and Reassemble

This section explains how to disassemble and reassemble the fax.

- Figure 4.2 shows the disassembly procedure flow as generalization.
- The detailed disassembly procedure is explained from sub-section 4.3.1 to 4.3.17.

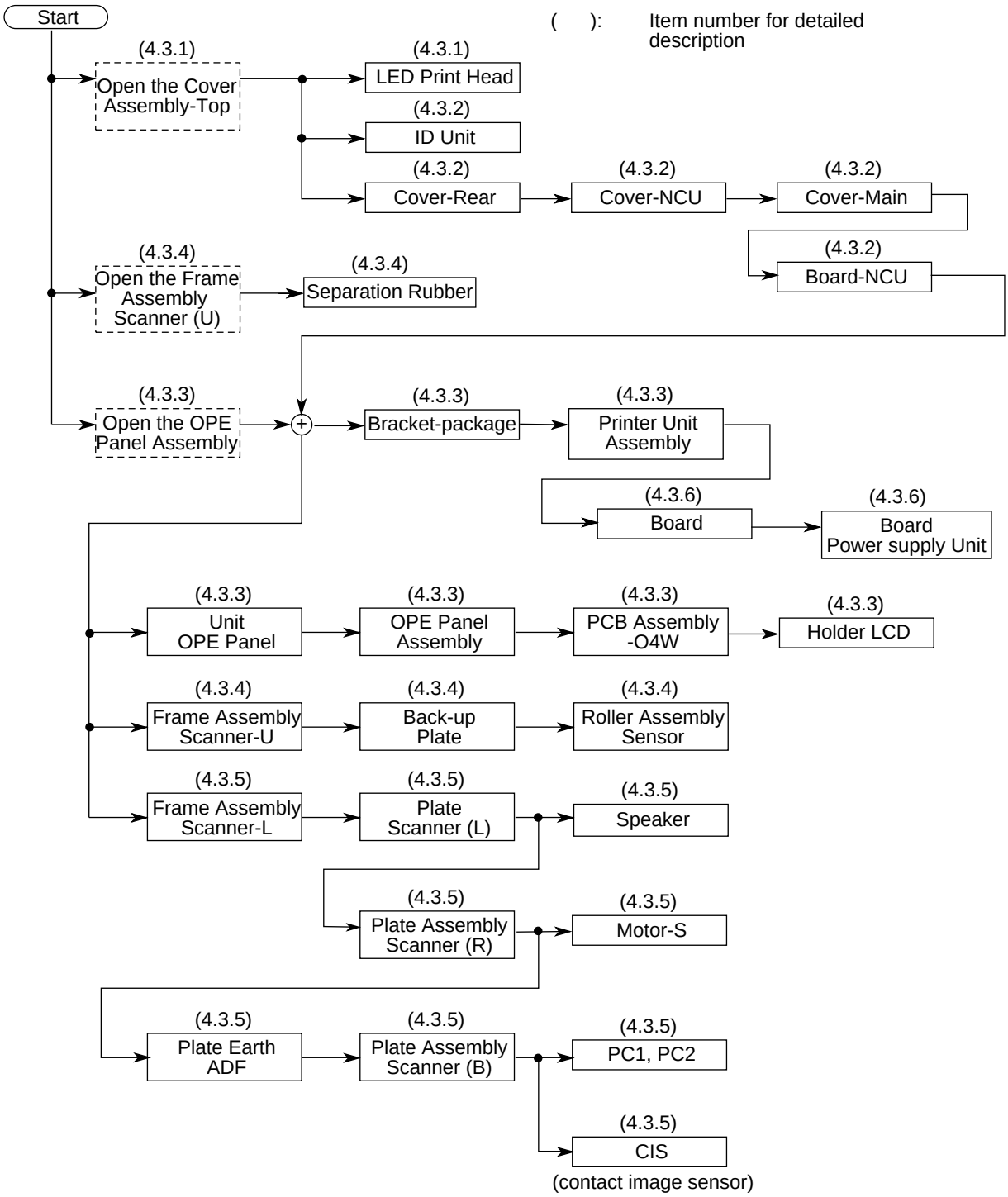



**Figure 4.1 (1/2) Disassembly Procedure Flow**

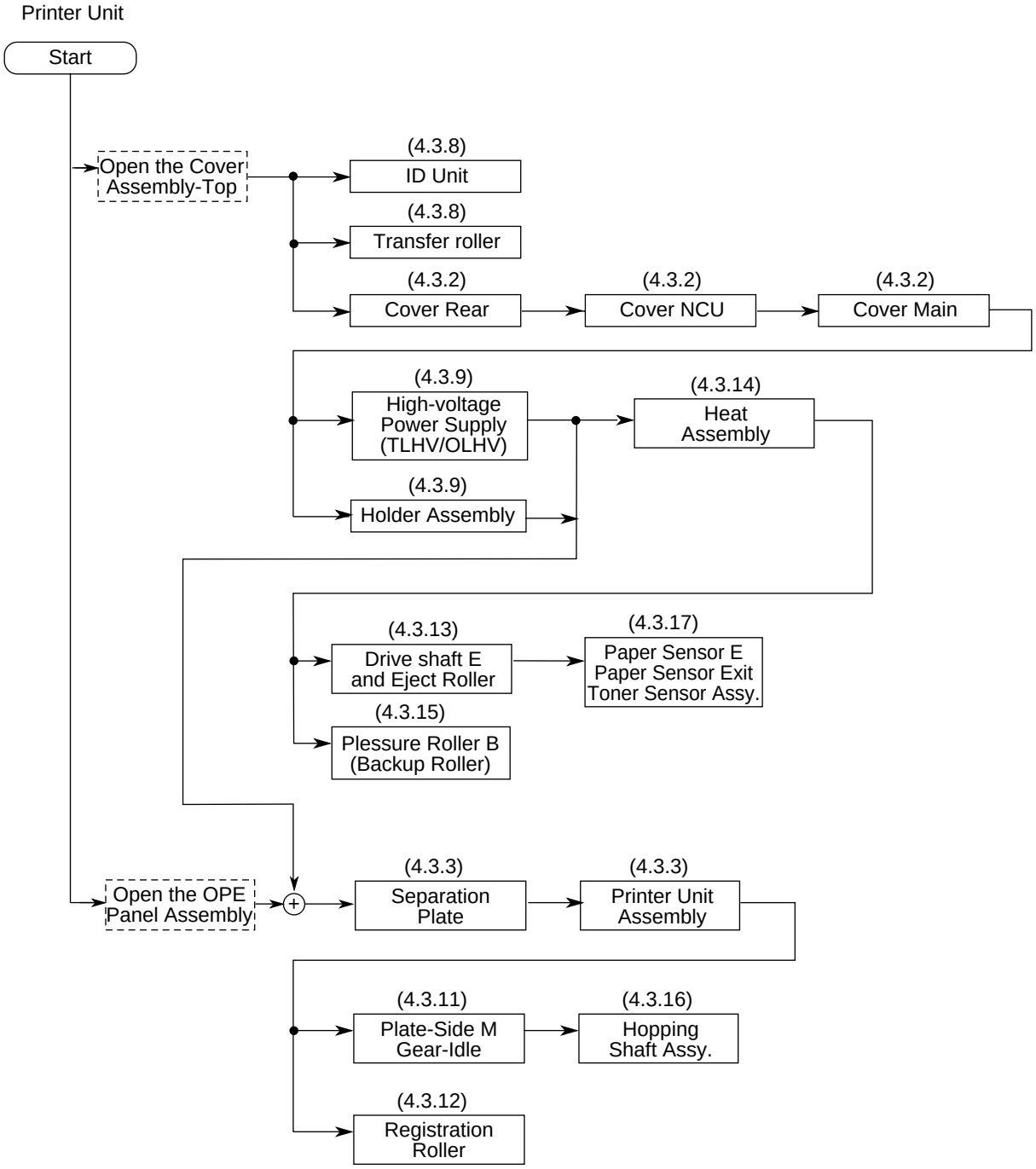
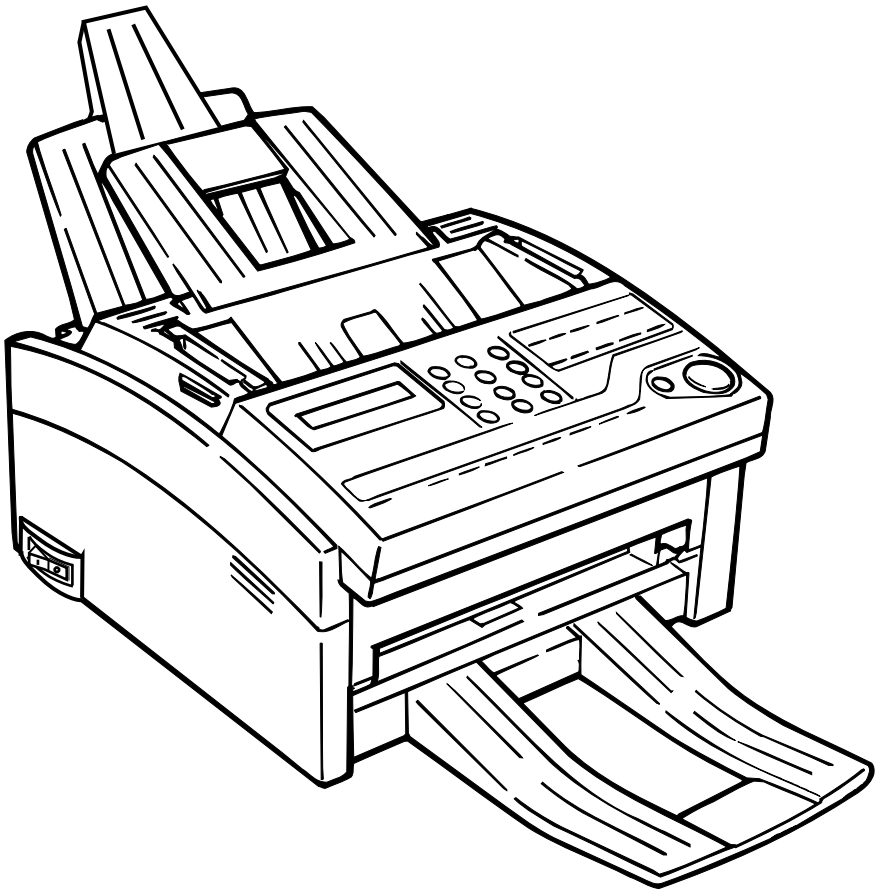



**Figure 4.1 (2/2) Disassembly Procedure Flow**

**Appearance of the OKIOFFICE84/OKIFAX 4500**



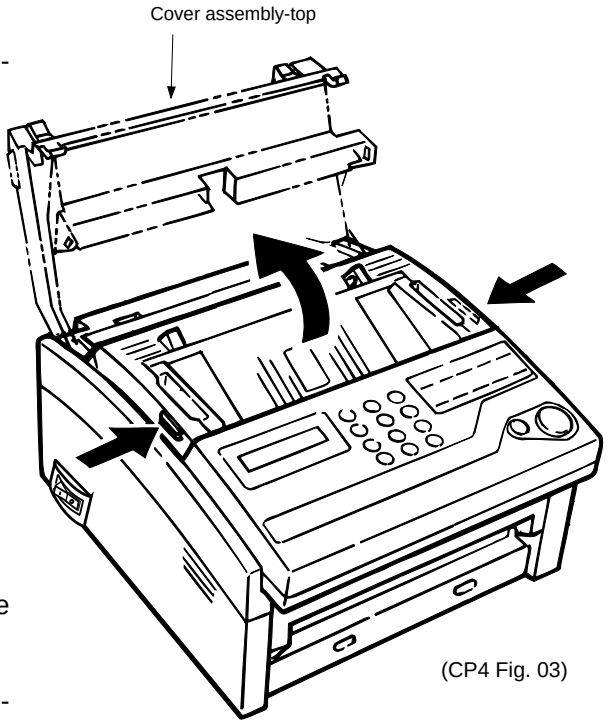
(FX051 CP4 Fig. 01)

### 4.3.1 LED Print Head

It is used two kind of head as the LED print head. (208 mm width or 216 mm width)

**(1) Disassembly procedure**

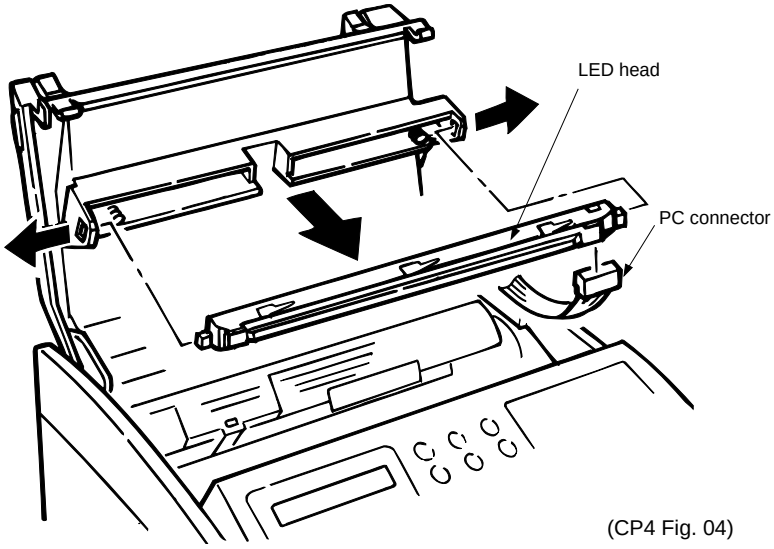
a) Open the cover assembly-top by raising.




(CP4 Fig. 03)

b) Disconnect the PC connector from the LED print head.

c) Remove the LED head while spreading the left clamp on the cover assembly-top.




(CP4 Fig. 04)

***Note:*** Be sure not to touch directly or push the SLA part of the print head.

**(2) Reassembly procedure**

Reverse the disassembly procedures.

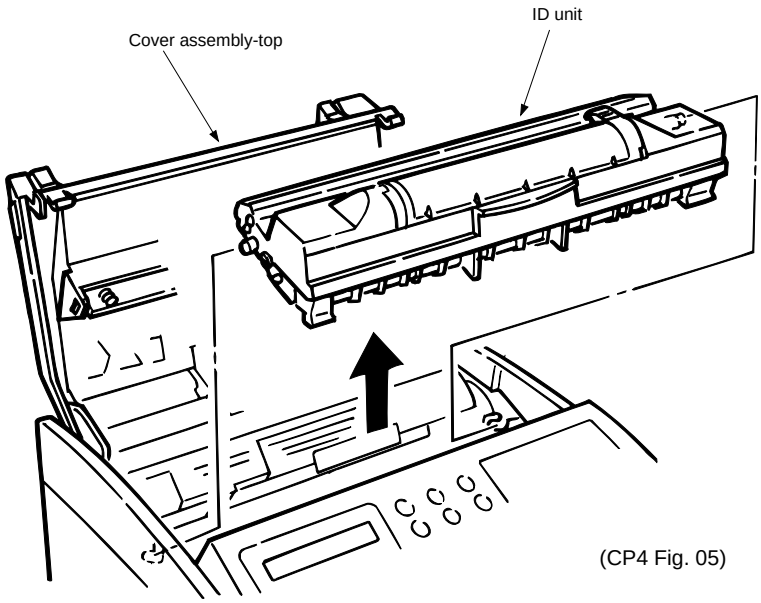
***Note:*** After replacing the LED print head, set drive time of the LED print head following the marking. (Refer to section 5.1). When you replace the LED print head, if the width of the LED head to be used is changed from current version, you should select the head width by the service personnel initial setting. (Refer to table 2.9.1 TF No. 26 and 27)

## 4.3.2 ID Unit, Rear-Cover, Cover-Main and Board-NCU

### (1) Disassembly procedure

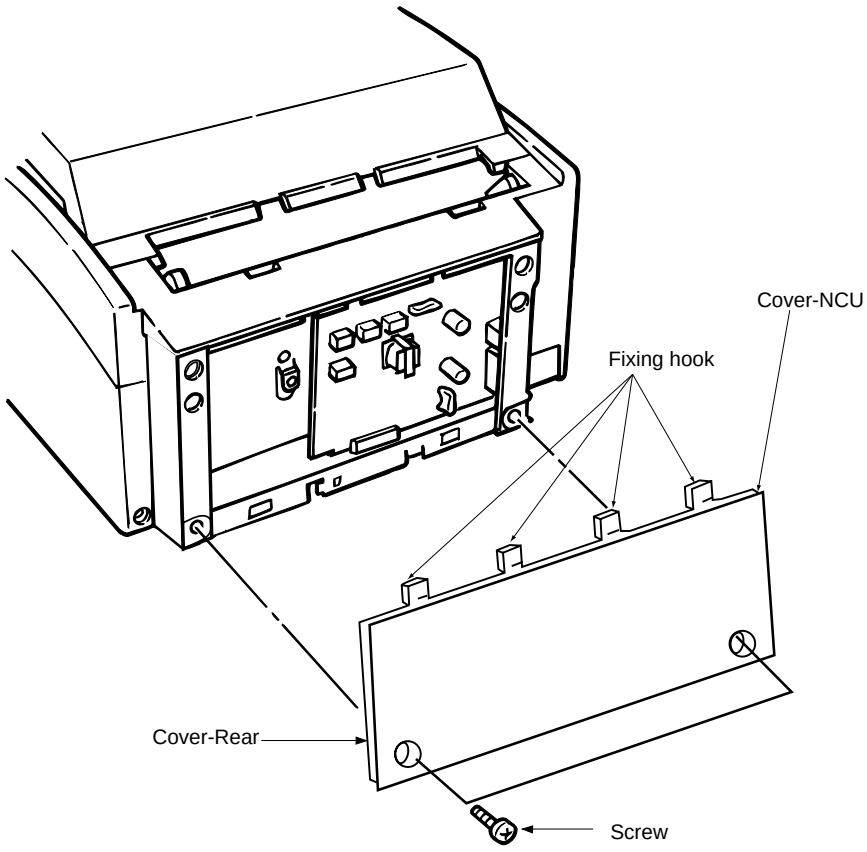
a) Open the cover assembly-top by raising.

b) Take out the ID unit from the equipment.



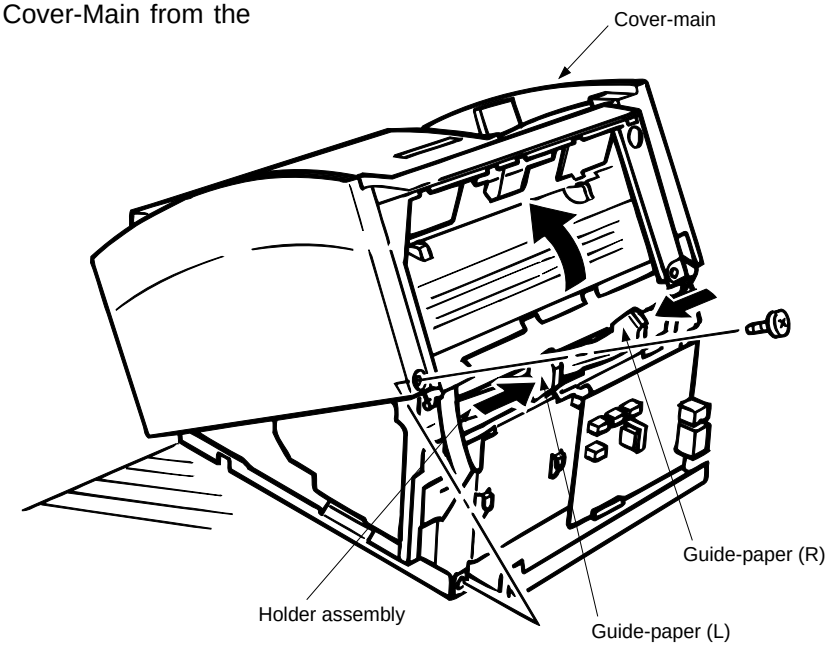

(CP4 Fig. 05)

c) Cover-Rear:
Remove the Cover-Rear by removing the screw 1 and the part of the fixing hooks (4).



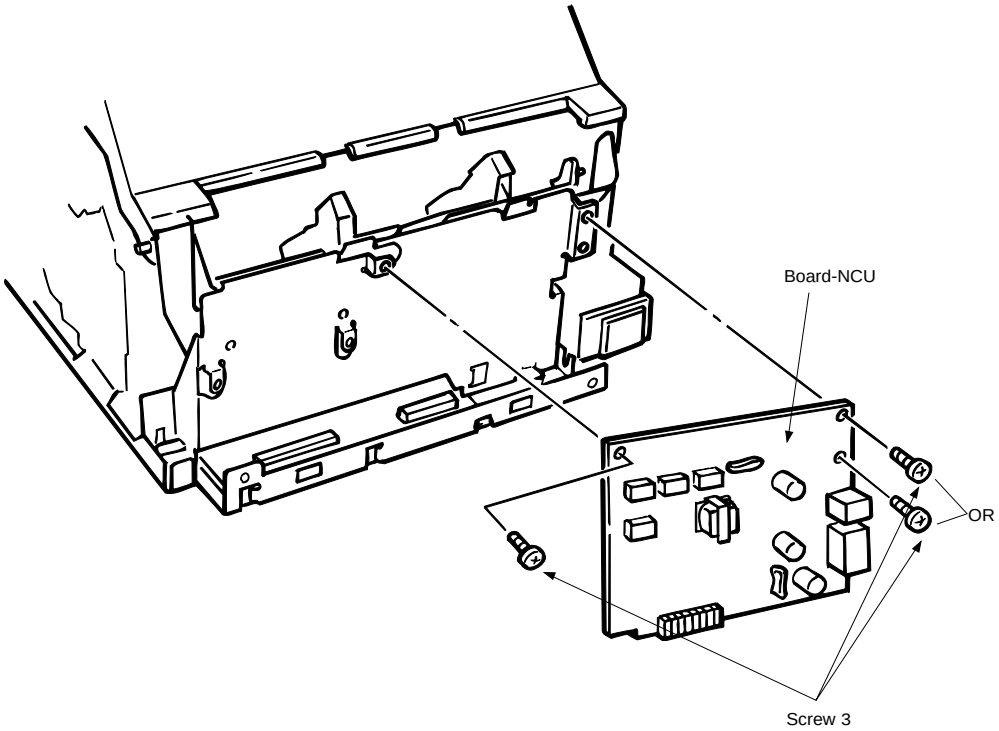

(CP4.1 Fig. 06)

e) First, move the center of Guide-paper (L) and (R) of Holder assembly, and then, open the Cover-Main from the rear side.




(CP4.1 Fig. 08)

f) Board-NCU:
Remove the two screw 3 and disconnect the connector (CN3) from Board-NCU.




(CP4.1 Fig. 09)

***Note***: Board-NCU can be removed without removing the Cover-Main.

**(2) Reassembly procedure**

Reverse the disassembly procedures.

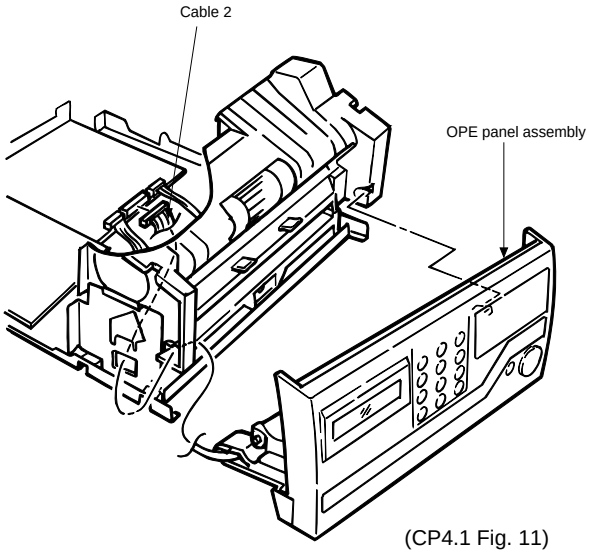
### 4.3.3 Unit-048 OPE-Panel

**(1) Disassembly procedure**

a) First, carry out the disassembly procedure up to the point of the 4.3.2 (Item (e). Cover-main).

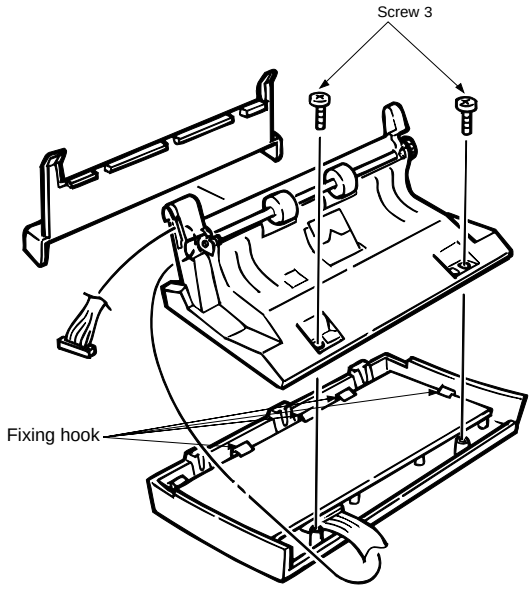
b) Dismount the Printer-Unit.
(See Section 4.3.18)

c) Open the OPE-panel assembly.



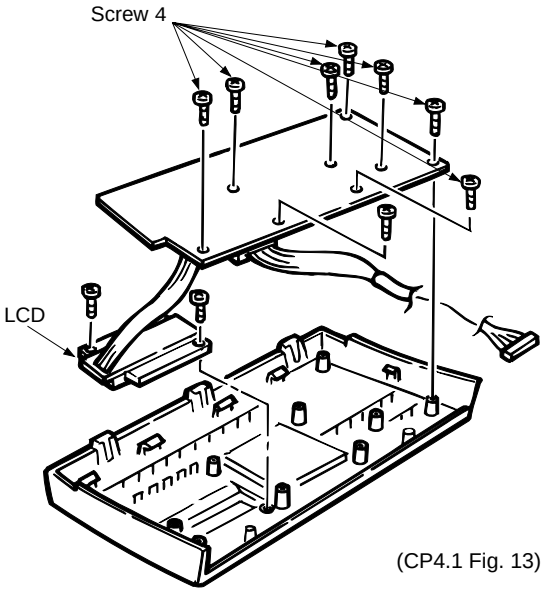

(CP4.1 Fig. 11)

d) OPE panel assembly:
Remove the OPE panel assembly by removing two screws ③, the eight screws ④ and the part of fixing hooks.




(CP4.1 Fig. 12)

e) Remove the part of LCD by removing the two screws.




(CP4.1 Fig. 13)

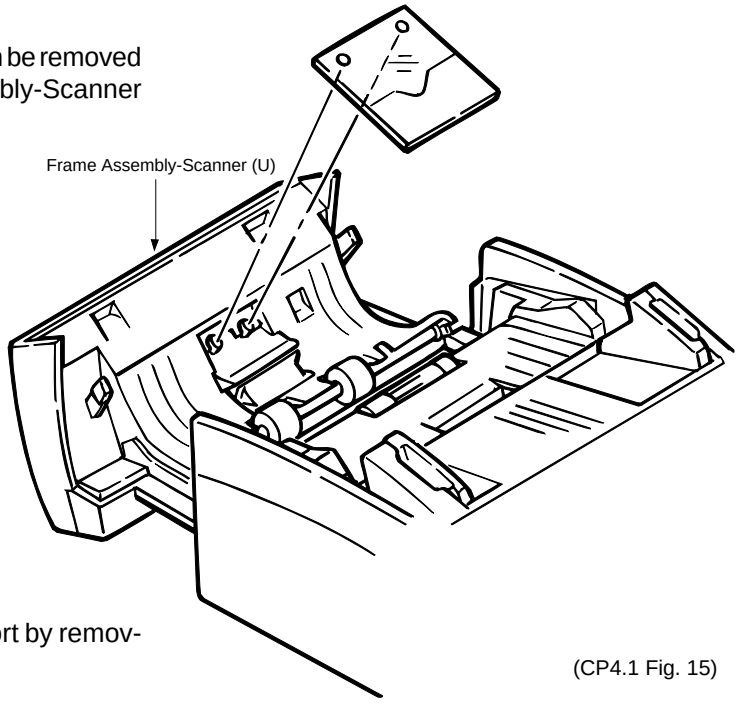
2) Reassembly procedure

Reverse the disassembly procedures.

## 4.3.4 Separation Rubber, Roller Assembly Sensor

### (1) Disassembly procedure

a) Separation rubber:
The separation rubber can be removed from the Frame Assembly-Scanner (U).



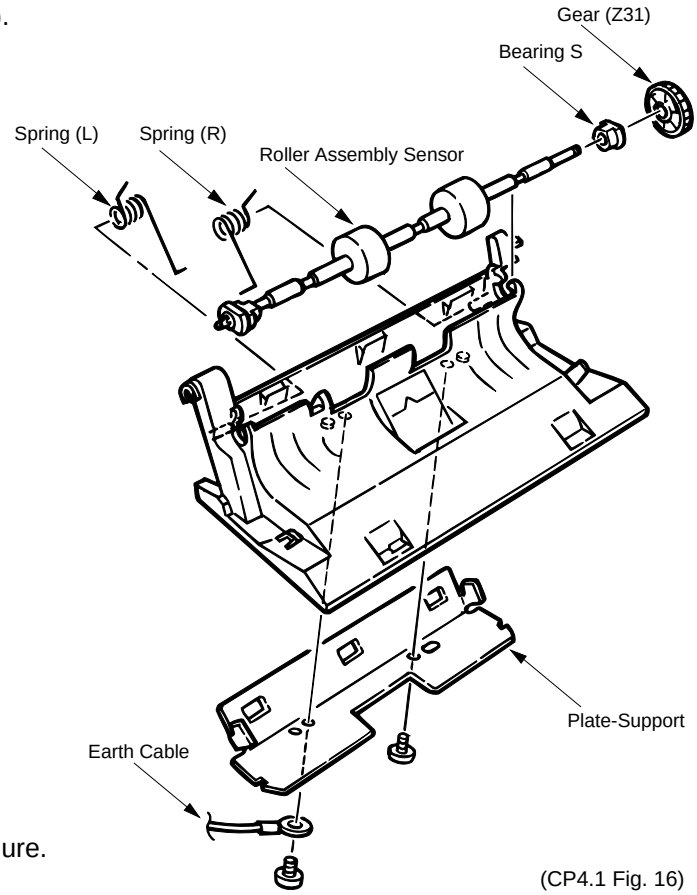

b) Roller Assembly Sensor:
Remove the Plate-Support by removing the two screws ①.

(CP4.1 Fig. 15)

***Note:*** Just fitting to two bossess.

c) Remove the two springs (L) and (R).

d) Remove the Roller Assembly-Sensor by removing the Gear (Z31).




(CP4.1 Fig. 16)

### (2) Reassembly procedure

Reverse the disassembly procedure.

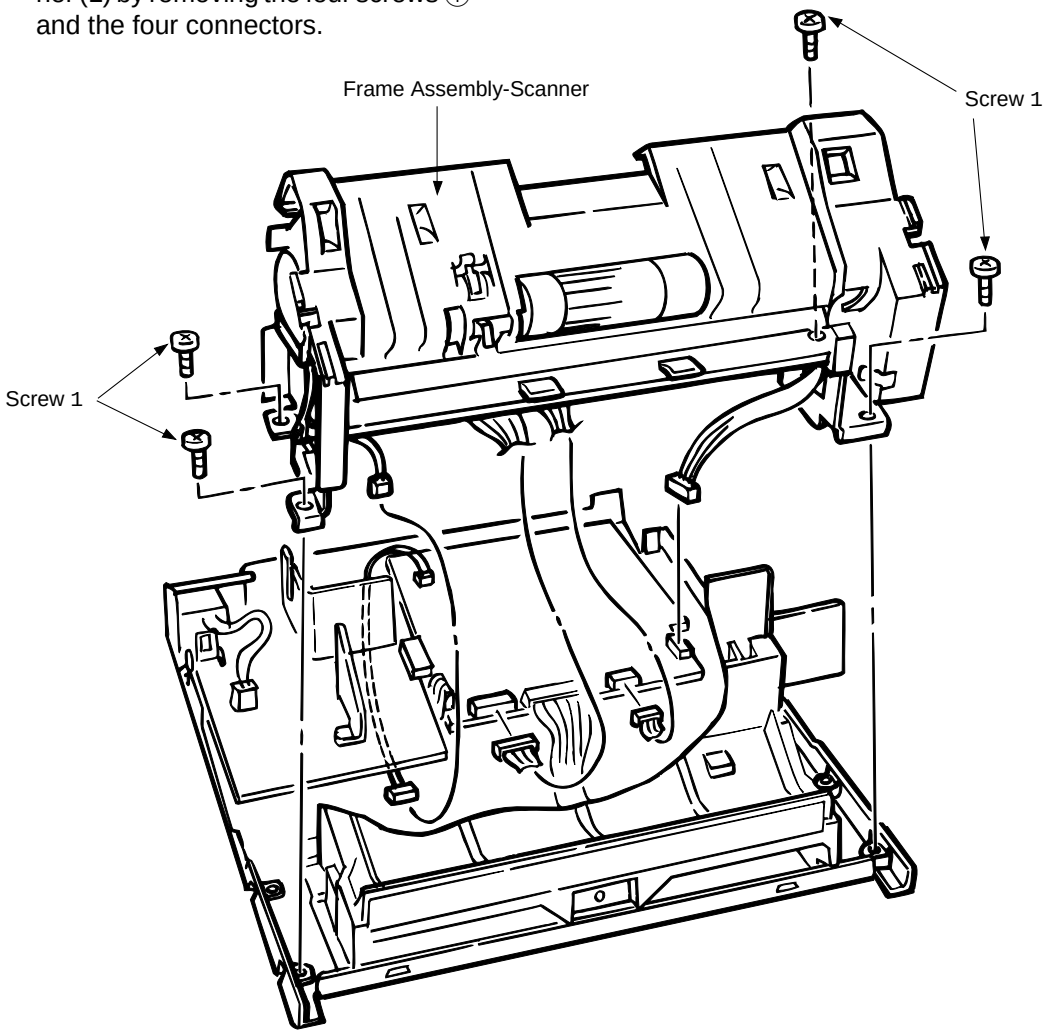
## 4.3.5 Roller Assembly-ADF, CIS (contact image sensor), Lever-PC1 and PC2

### (1) Disassembly procedure

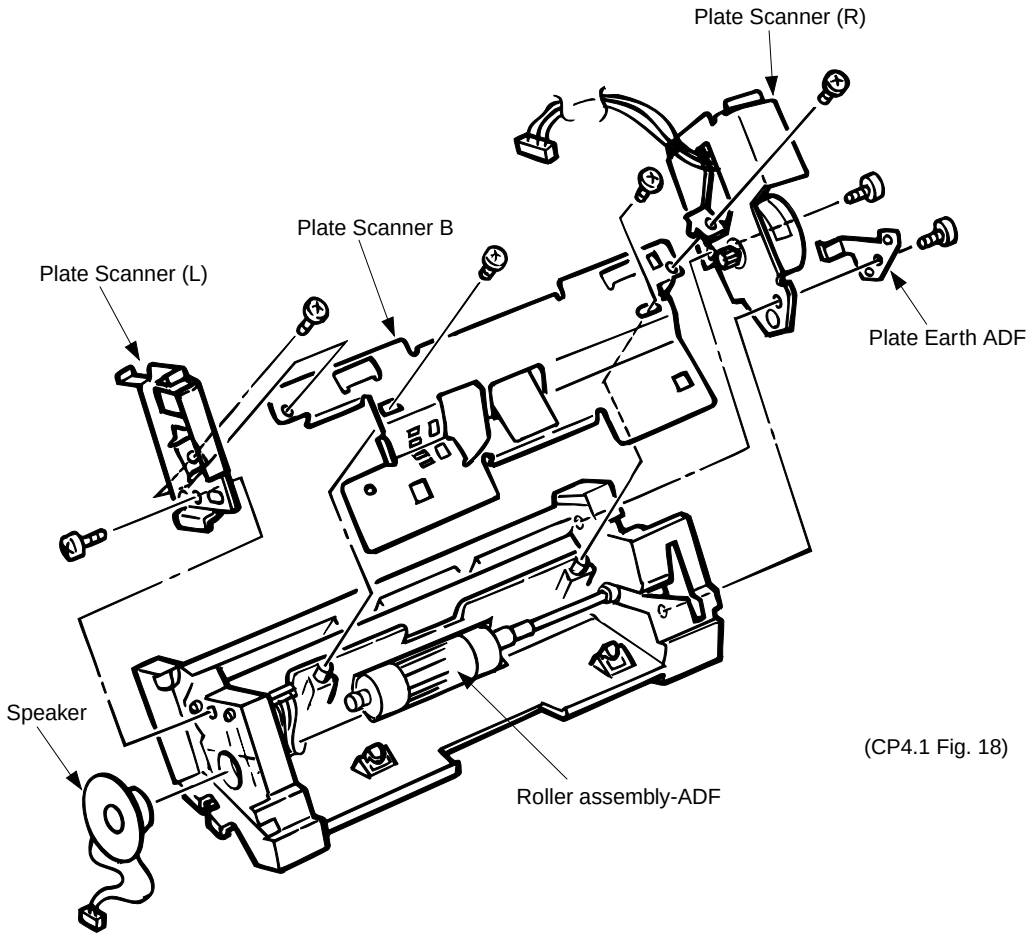
a) First, carry out the disassembly procedure up to the point of the 4.3.2 and 4.3.3.

b) Dismount the Printer-Unit.
(See Section 4.3.18)

c) Remove the Frame assembly-Scanner (L) by removing the four screws ① and the four connectors.




(CP4.1 Fig. 17)

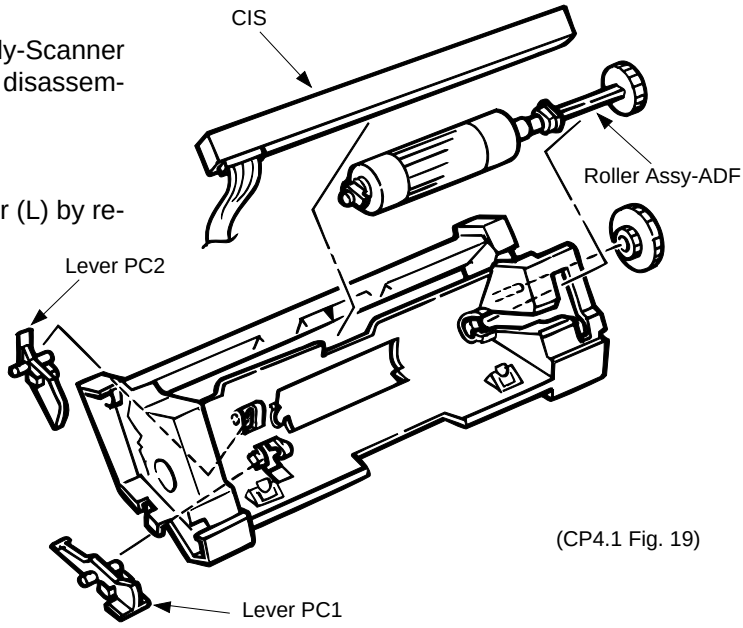



(CP4.1 Fig. 18)

d) Turn the Frame Assembly-Scanner inside out and perform the disassembly procedure.

e) Remove the Plate Scanner (L) by removing the two screws.

f) Remove the Speaker.



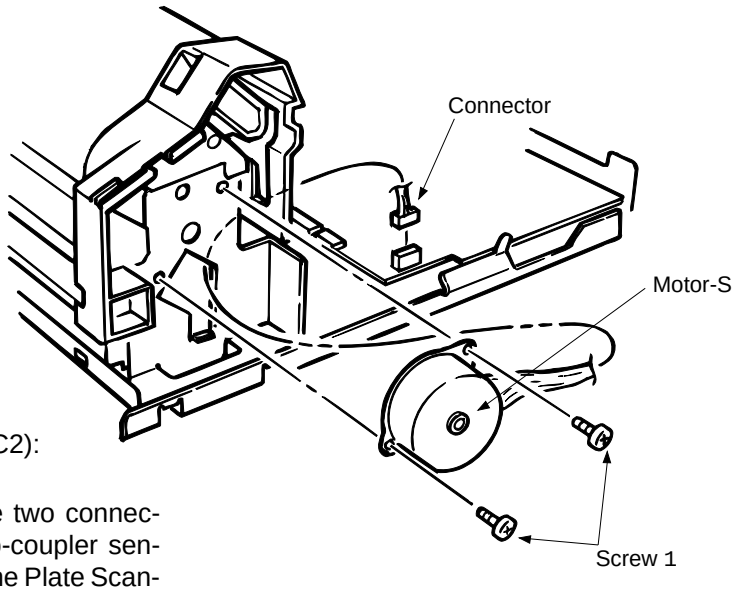

(CP4.1 Fig. 19)

g) Remove the Plate Assembly-Scanner (R) and Plate Earth ADF by removing the three screws.

h) Remove the Plate Scanner (B) by removing the two screws and the part of the fixing hooks.

i) Remove the CIS (contact image sensor).

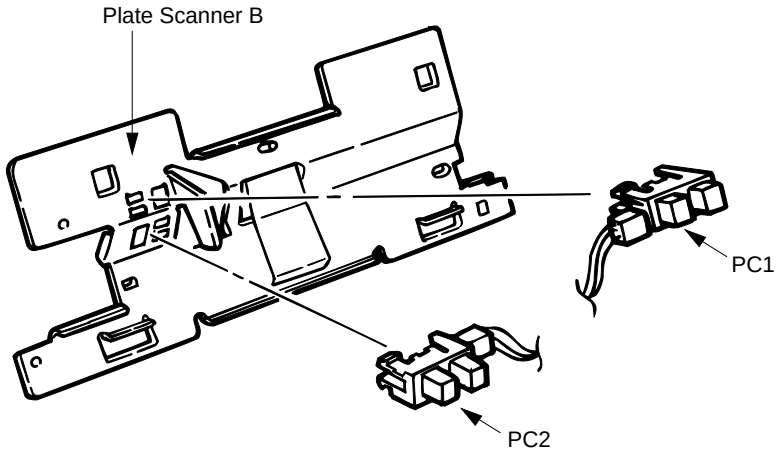
j) Motor-S:
Remove the Motor-S by removing the connector of motor and the two screws ①.




k) Photo-Sensor (PC1, PC2):

After disconnecting the two connectors, remove the photo-coupler sensors PC1 and PC2 on the Plate Scanner B by pressing the latch using the flat screwdriver or like.

(CP4.1 Fig. 19)




(CP4.1 Fig. 20)

**(2) Reassembly procedure**

Reverse the disassembly procedures.

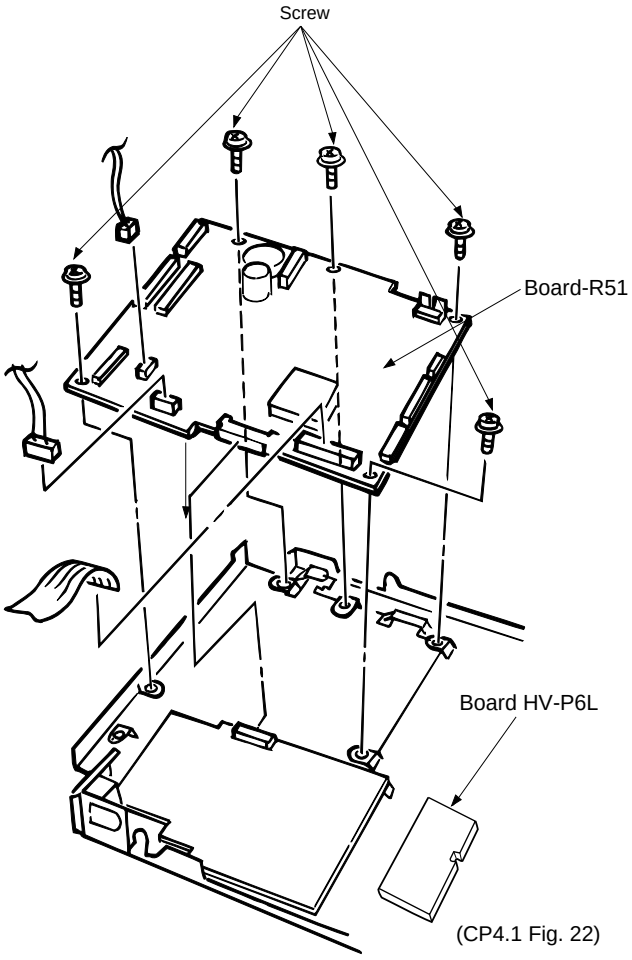
## 4.3.6 Board-R51, Power Supply Unit, Board HV-P6L

### (1) Disassembly procedure

a) First, carry out the disassembly procedure up to the point of the 4.3.2 (Cover-Rear, Cover-Main etc.).

b) Board-R51:
Disconnect the all connectors.

c) Remove the Board-R51 by removing the five screws.



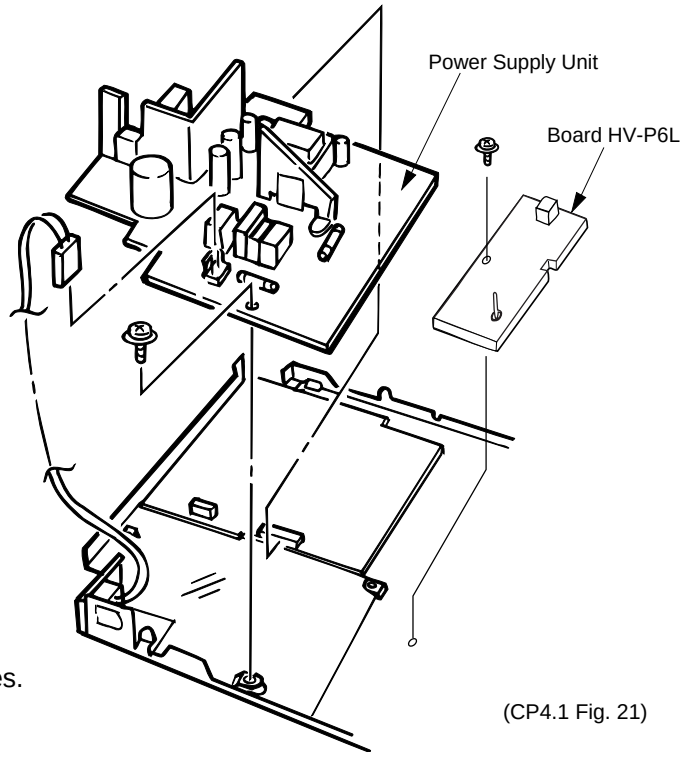

(CP4.1 Fig. 22)

d) Power Supply Unit:
Disconnect the all connectors.

e) Remove the Power Supply Unit by removing the screw.

f) Board HV-P6L:
Disconnect the all connectors.

g) Remove Board HV-P6L by removing one screw.



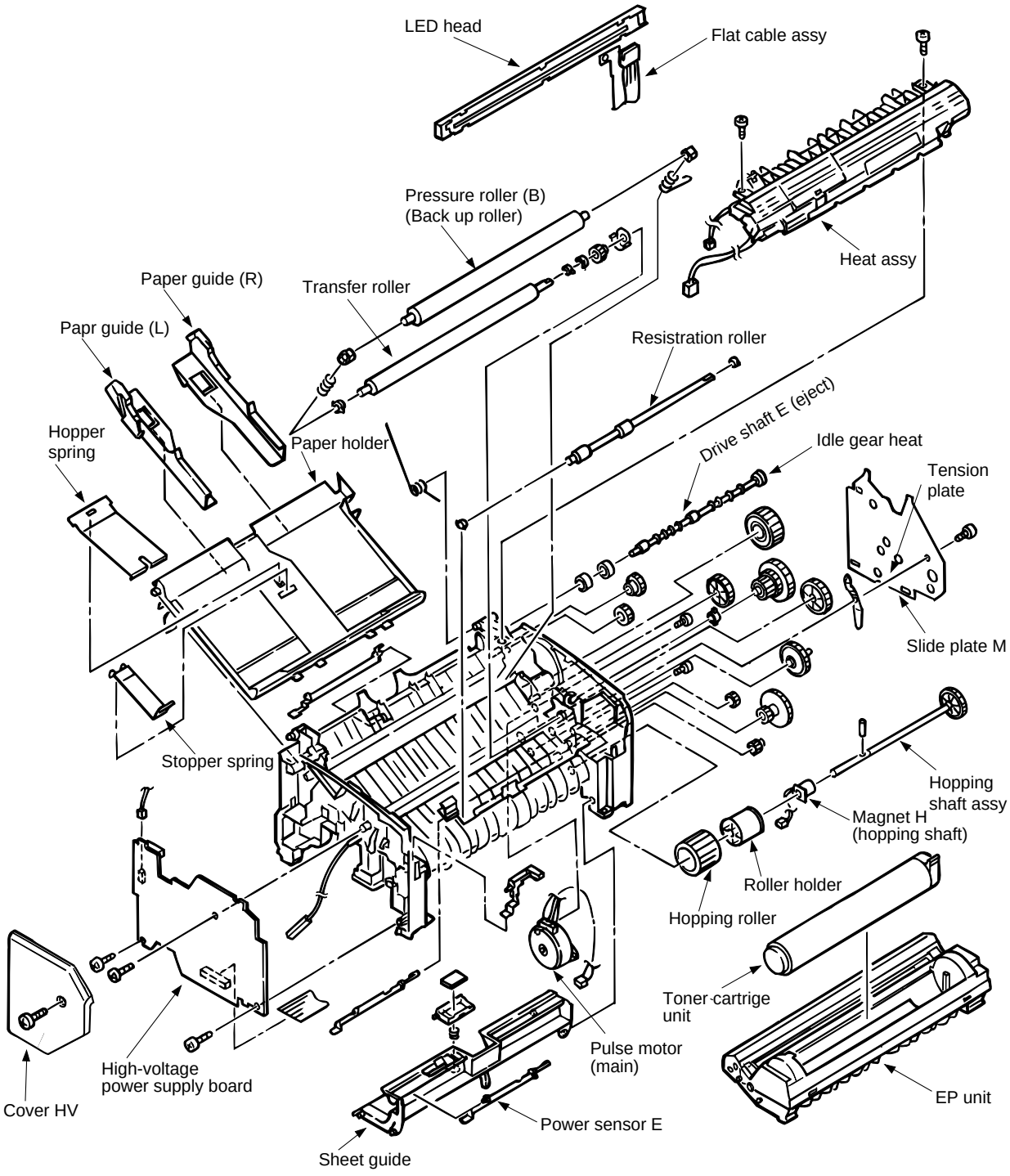

(CP4.1 Fig. 21)

### (2) Reassembly procedure

Reverse the disassembly procedures.

## 4.3.7 Printer Unit Section

[Base Frame Unit]



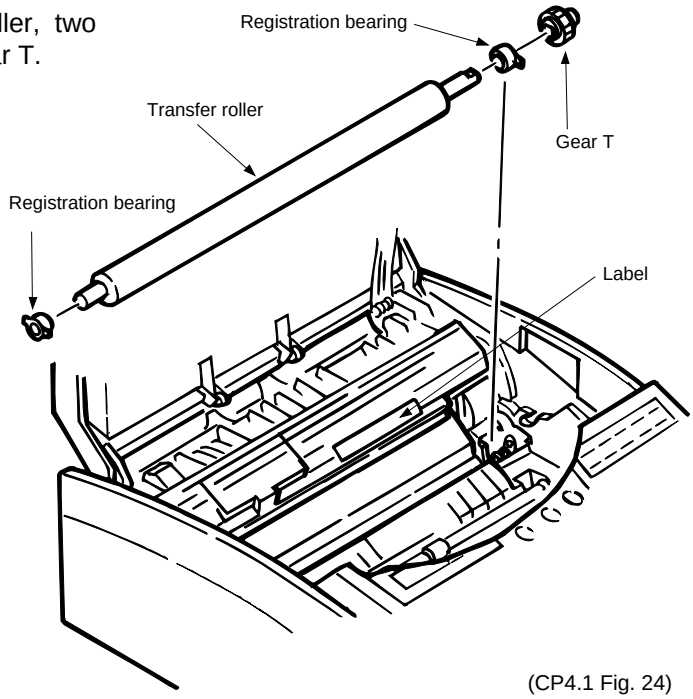

(CP4.1 Fig. 23)

## 4.3.8 Transfer Roller

### (1) Disassembly procedure

a) Open the cover assembly-top by raising and remove the ID unit.

b) Remove the right claw.
Then, dismount transfer roller, two registration bearing, and gear T.




(CP4.1 Fig. 24)

### (2) Reassembly procedure

Reverse the disassembly procedures.

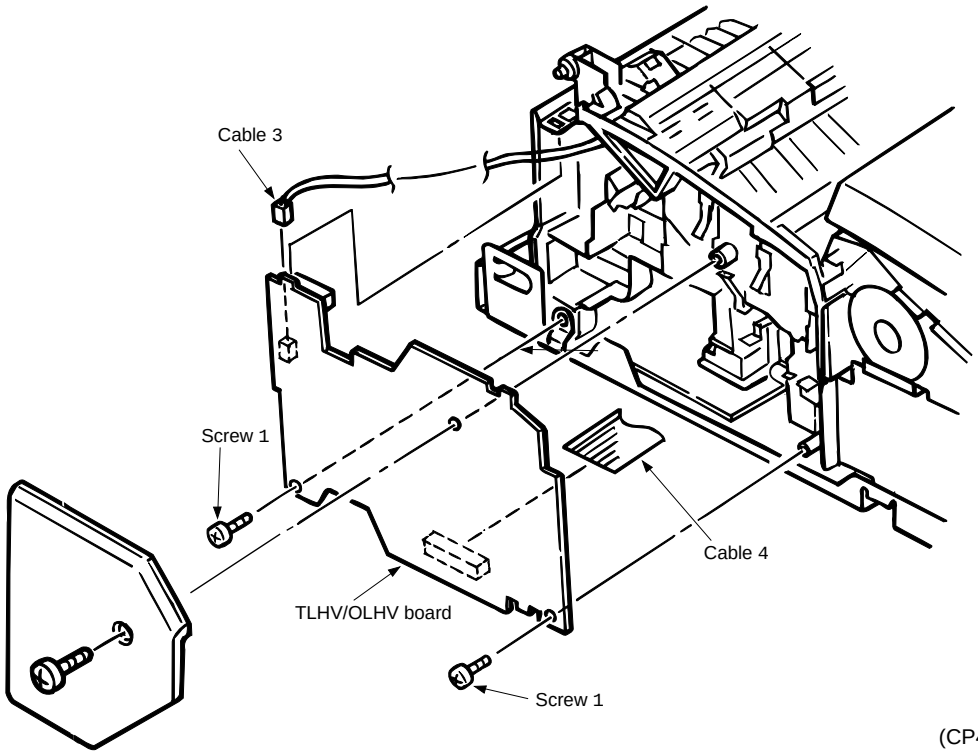
## 4.3.9 High-Voltage Power Supply Unit (HV-P2H)

### (1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-MAIN).

b) Remove three screws ① then rem .ove Cover-HV and draw out high-voltage power supply board (HV-P2H).

c) Disconnect all the cables ③ and ④ from high-voltage power supply board (HV-P2H) and dismount high-voltage power supply board.




(CP4.1 Fig. 25)

***Caution:*** Note the following when assembling the high-voltage power supply board:
- Mount the high-voltage power supply board with Cover-top assembly removed or open.
- Take care that cable ③ will not interfere with the paper sensor exit when it is connected.

### (2) Reassembly procedure

Reverse the disassembly procedures.

## 4.3.10 Holder Assembly

### (1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

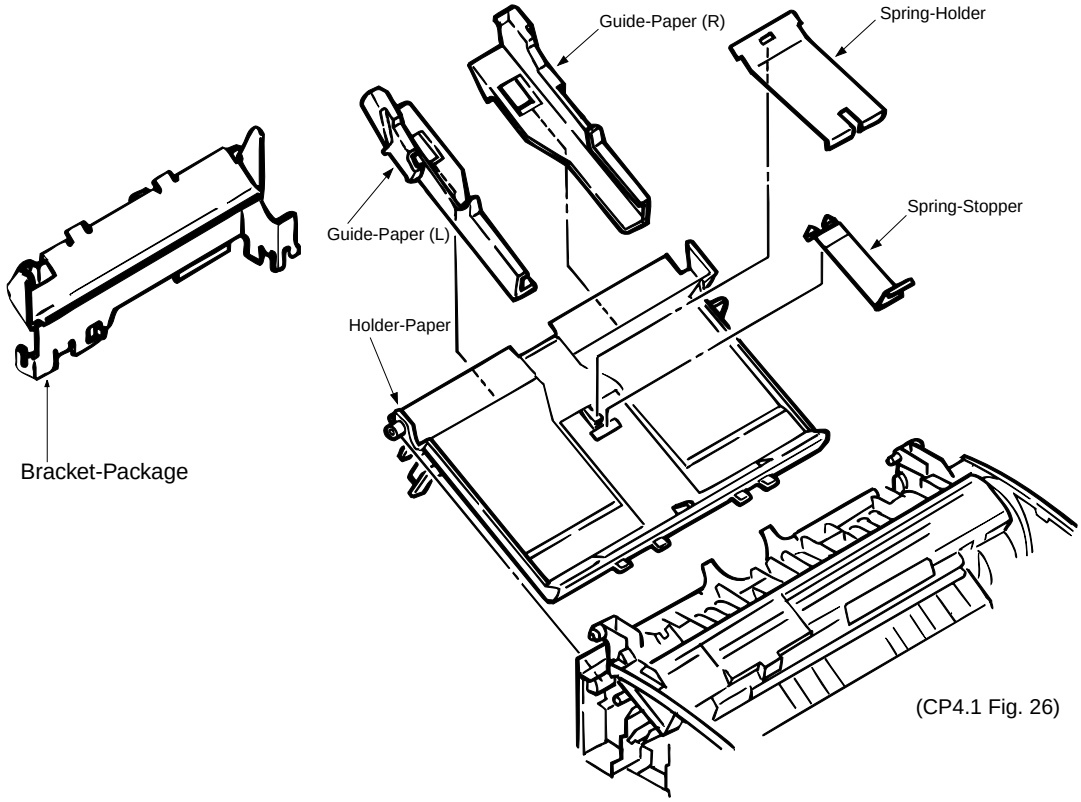
b) Dismount the Bracket-Package.

c) Dismount the Holder-Paper.

d) Unlock and dismount the Guide-Paper (L) and Guide Paper (R).

e) Remove the claw and dismount Spring-Holder.

f) Remove the claw and dismount Spring-Stopper.




(CP4.1 Fig. 26)

### (2) Reassembly procedure

Reverse the disassembly procedures.

## 4.3.11 Plate-Side M and Gear-Idle

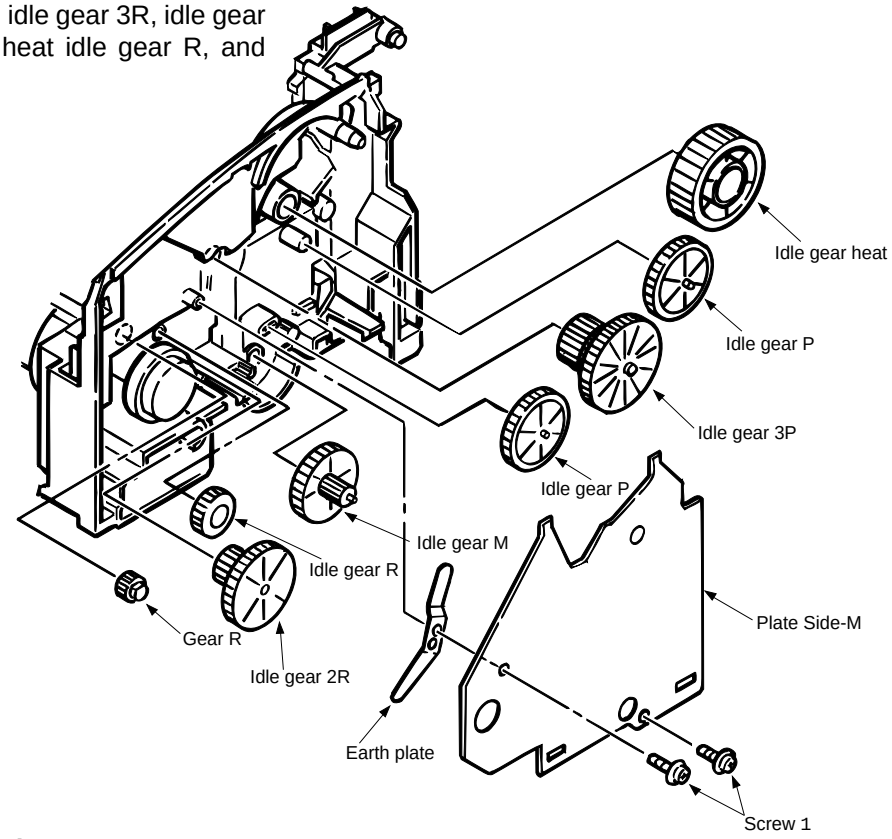
### (1) Disassembly procedure

Perform parts replacement while making the base frame assembly stand so that Plate-Side M will face upward.

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

b) Remove two screws ① and two claws, then dismount Plate-Side M.

c) Dismount Plate-Earth, two idle gears P, idle gear M, idle gear 3R, idle gear 2R, idle gear heat idle gear R, and gear R.




(CP4.1 Fig. 27)

### (2) Reassembly procedure

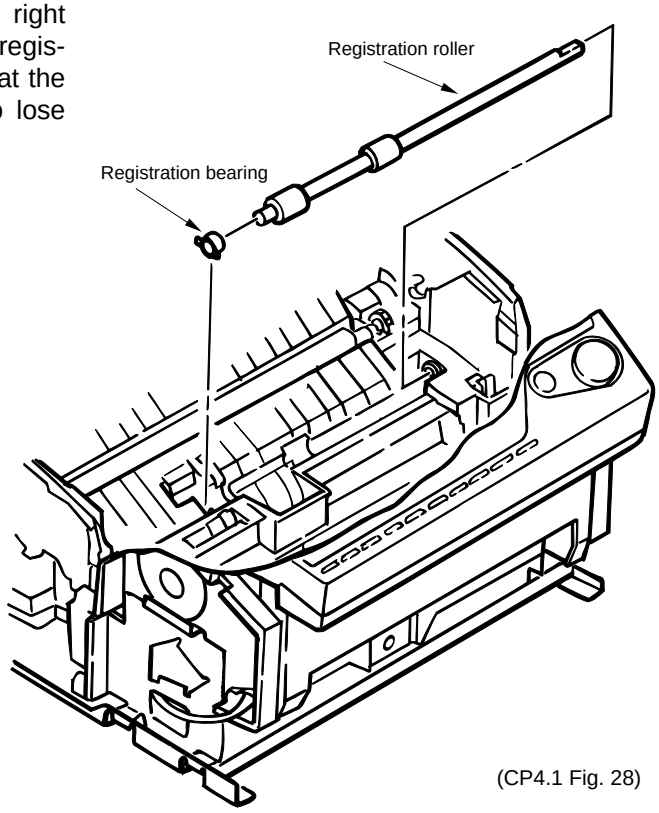
Reverse the disassembly procedure.

## 4.3.12 Registration Roller

### (1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

b) Move registration roller to the right and dismount it by lifting. (Two registration bearings also come off at the same time. Take care not to lose them.)




(CP4.1 Fig. 28)

### (2) Reassembly procedure

Reverse the disassembly procedures.

## 4.3.13 Drive Shaft E (Eject) and Eject Roller

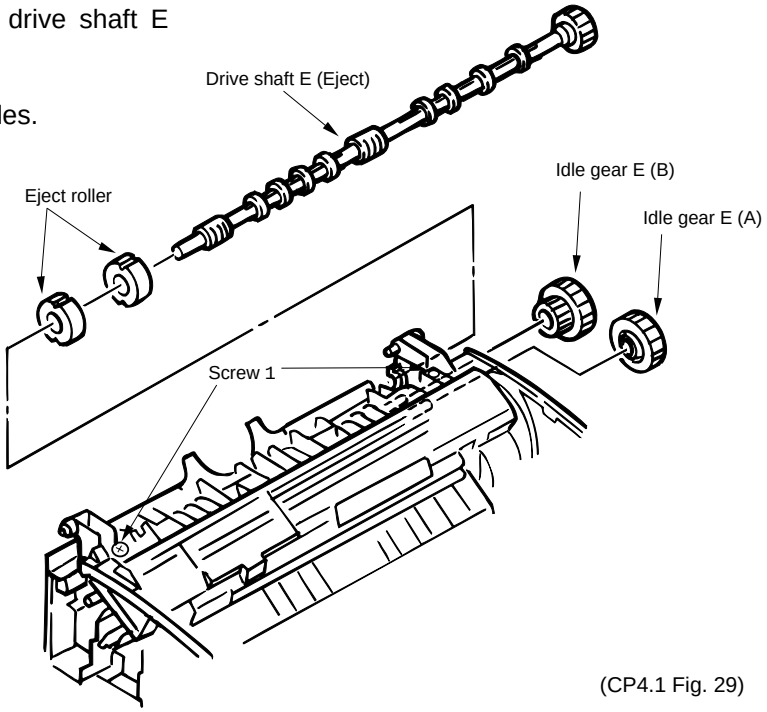
### (1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

b) Remove two screws ① from Cover Heat Assembly (section 4.3.14), lift the heat assay, and dismount idle gear E (A) and idle gear E (B).

c) Unlock and dismount drive shaft E (Eject).

d) Dismount two eject rolles.




(CP4.1 Fig. 29)

### (2) Reassembly procedure

Reverse the disassembly procedures.

## 4.3.14 Heat Assembly

This section explains how to dismount the heat assembly and parts in the assembly.

### (1) Disassembly procedure

< Dismounting the heat assembly>

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

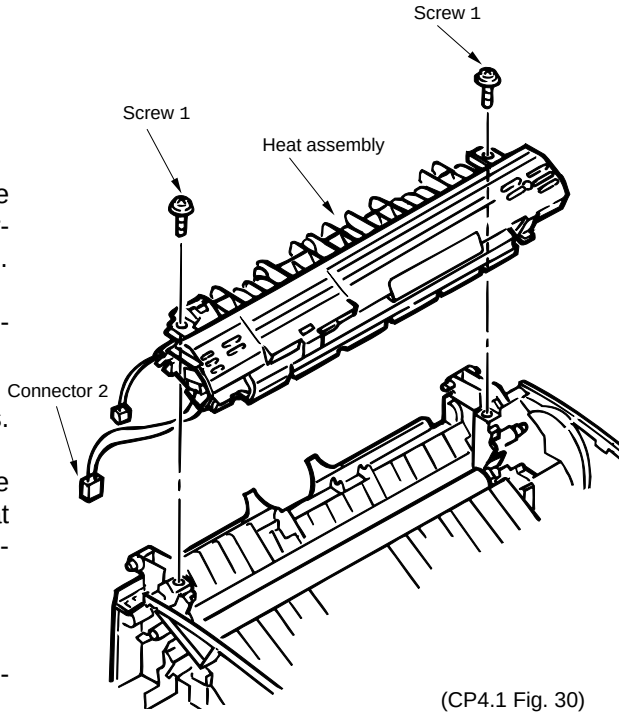
b) Dismount the high-voltage power supply board. (See Section 4.3.9)

c) Remove NCU-Board with two screws.

d) Remove Bracket-Package with three screws, then disconnect Cable-Flat from connector on R44-Board (M-CNT).
(See Sction 4.3.18)

e) Pull out the Holder-Assy. (See Section 4.3.10)

f) Disconnect connector ②, remove two screws ①, and dismount the heat assembly.



(CP4.1 Fig. 30)

<Dismounting parts in heat assembly>

a) Dismount heat separator.

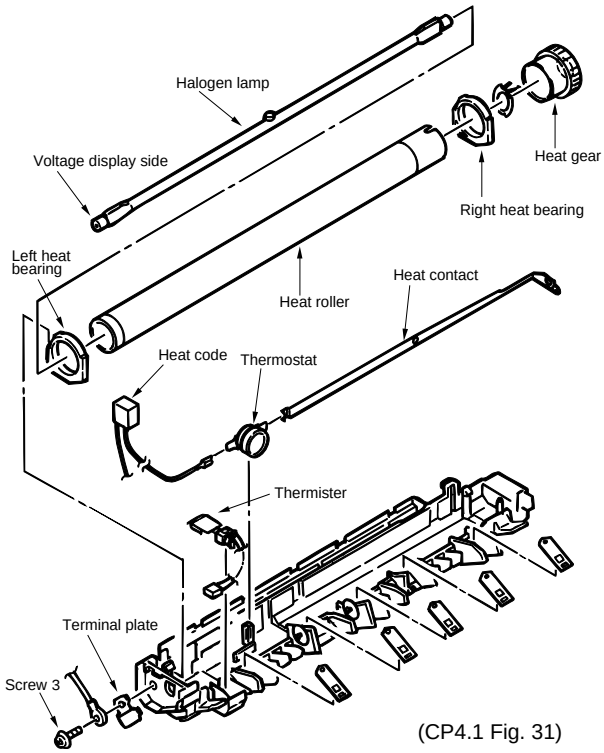
b) Remove screw ③ and dismount terminal plate. (Handle heat assembly carefully because Halogen lamp comes off.)

c) Turn left and right heat bearings in the arrow direction to unlock. Then, dismount halogen lamp, heat bearing, heat roller, and heat gear together. (Take care not to drop the Halogen lamp.)

d) Dismount thermistor.

e) Dismount the clamp, then thermostat, heat contact, and heat cord together.

f) Dismount heat contact and heat cord from thermostat.



(CP4.1 Fig. 31)

***Caution:*** Take care not to bend the claw when dismounting heat bearing.

### (2) Reassembly procedure

Reverse the disassembly procedures

## 4.3.15 Pressure Roller B (Back Up Roller)

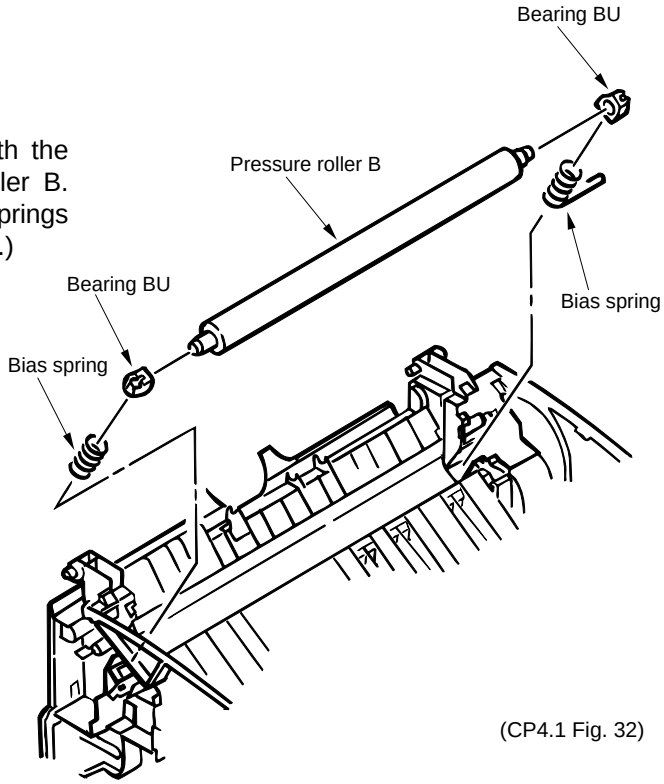
**(1) Disassembly procedure**

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

b) Dismount the high-voltage power supply board. (See Section 4.3.9)

c) Dismount heat assembly. (See section 4.3.14)

d) Dismount the engagement with the left ground, then pressure roller B. (Two bearing BUs and two bias springs also come off at the same time.)




(CP4.1 Fig. 32)

**(2) Reassembly procedure**

Reverse the disassembly procedures

## 4.3.16 Hopping Shaft Assembly

### (1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

b) Dismount the high-voltage power supply board. (See Section 4.3.9)

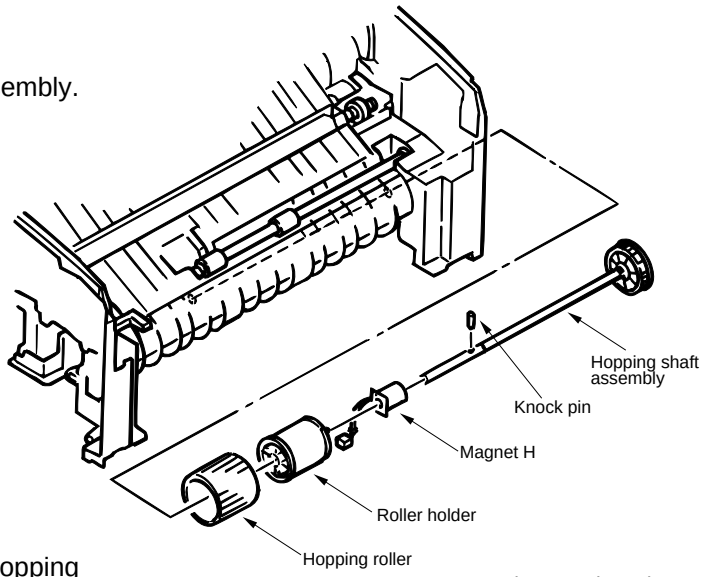
c) Dismount the paper holder assembly. (See Section 4.3.10)

d) Dismount the sheet guide. (See Section 4.3.11)

e) Dismount the side plate M. (See Section 4.3.11)

f) Raise up roller holder, slide hopping shaft assembly, and dismount roller holder and hopping roller. (Knock pin also comes off at the same time. Take care not to lose it.)

g) Draw out hopping shaft assembly to the right and dismount magnet H.




(CP4.1 Fig. 33)

### (2) Reassembly procedure

Reverse the disassembly procedures

## 4.3.17 Paper Sensor E, Paper Sensor Exit and Toner Sensor Assembly

### (1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear, Cover-NCU and Cover-MAIN).

b) Dismount the high-voltage power supply board. (See Section 4.3.9)

c) Dismount the paper holder assembly. (See Section 4.3.10)

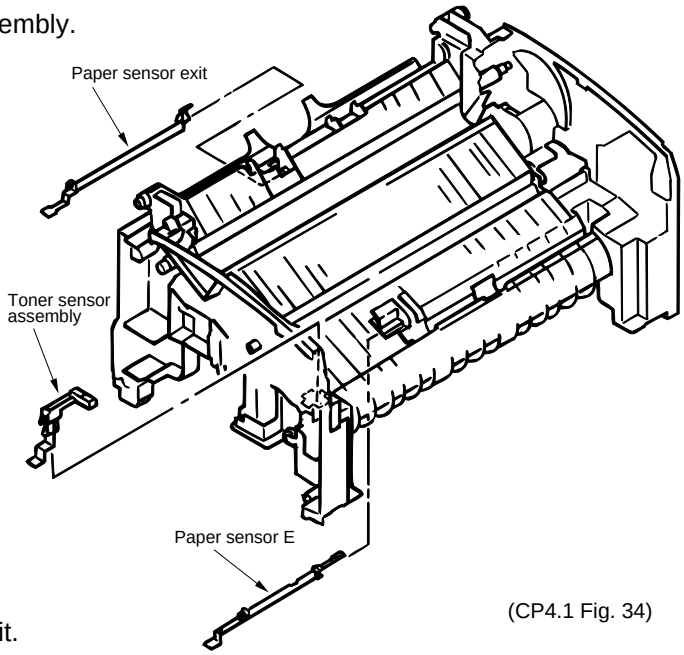
d) Dismount the heat assembly. (See Section 4.3.14)

e) Dismount the drive shaft E. (See Section 4.3.13)

f) Dismount the paper sensor E.

g) Dismount the paper sensor exit.

h) Dismount the toner sensor assembly.




(CP4.1 Fig. 34)

### (2) Reassembly procedure

Reverse the disassembly procedures

## 4.3.18 Printer Unit

### (1) Disassembly procedure

a) First, carry out procedure up to the point of the 4.3.2 (ID Unit, Cover-Rear and Cover-Main).

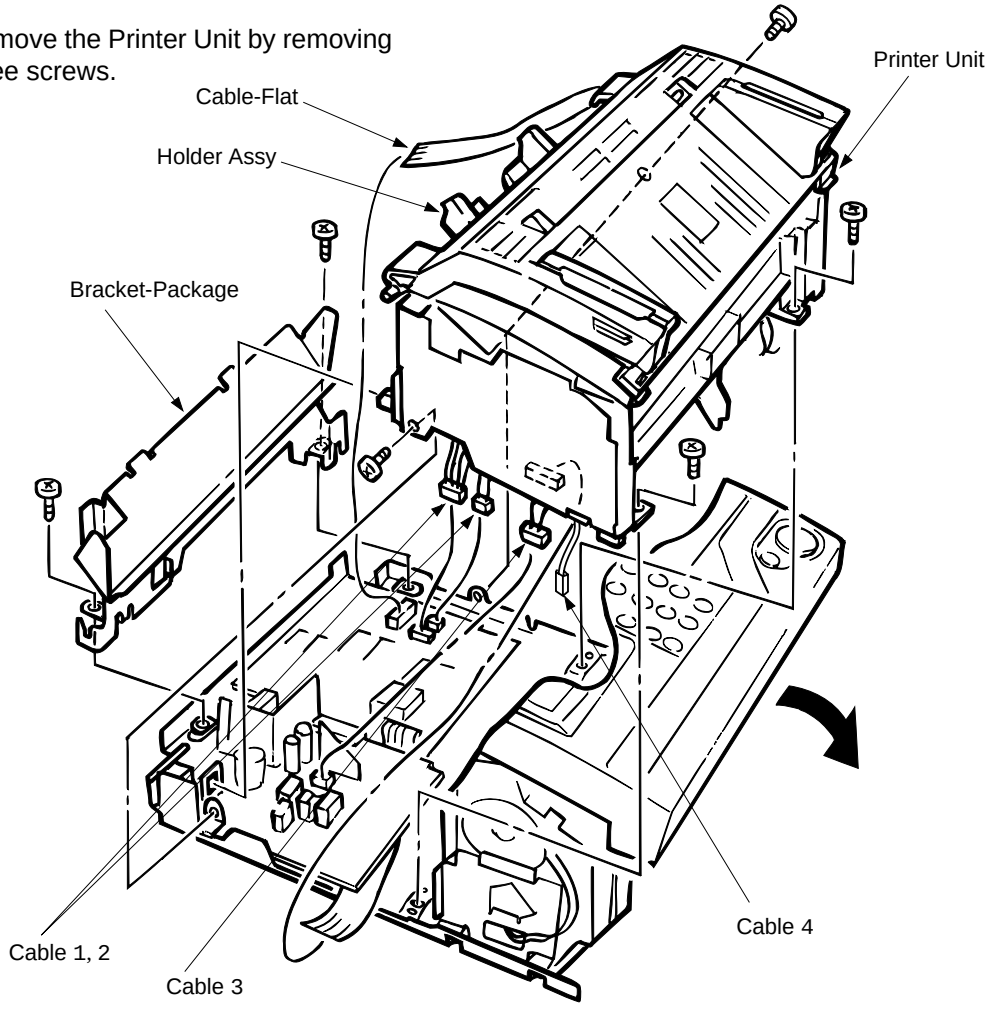
b) Remove Bracket-Package with three screws, then disconnect Cable-Flat from connector on R51-Board (M-CNT).

c) Pull out the Holder-Assy.

d) Dismount the high-voltage power supply board.
(See Section 4.3.9)

e) Disconnect cable ① and ② from connector on Board-R51 (M-CNT), and disconnect cable ③ from Connect on Power Supply Unit, and disconnect cable ④ from Board HV-P6L.

f) Remove the Printer Unit by removing three screws.



# *CHAPTER 5*

# *ADJUSTMENTS*

## 5.1 Setting of LED Print Head Drive Time

- Adjustment point: Technical Function No. 26.

* To bring the LCD up to Technical Function, press SELECT FUNCTION key once, COPY key twice and "2" key (In case of no message in memory).

***Note:*** When the rank marking of the replaced LED print head (new part) is the same as that of the used LED print head (old part), you do not always have to set the LED print head drive time.

**Adjustment:**

1) Turn AC power ON.
2) Setting of LED print head should be according to the Table 5.1.1 below:

**Table 5.1.1 Setting of Technical Function No. 26**

| Setting / Rank Marking | MSB ↕ LSB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| | | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 291 – 313 | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | | |
| 269 – 290 | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | | |
| 248 – 268 | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | | |
| 229 – 247 | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | |
| 212 – 228 | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | |
| 196 – 211 | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | |
| 181 – 195 | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | |
| 168 – 180 | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | |
| 155 – 167 | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | |
| 143 – 154 | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | |
| 132 – 142 | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | |
| 122 – 131 | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | |
| 113 – 121 | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | |
| 105 – 112 | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | |
| 100 – 104 | | | | | | | | | | | | | | | | | | | | | | | | * | | | | | | | | | |

***Note1:*** The luminous intensity ranking is determined by the first, second and third digits from the right in the LED print head (i.e. in ---XX122, 122 is the luminous intensity ranking.)

***Note2:*** When the head label of the replaced LED print head (new part) is the same as that of the used LED print head (old part), you do not always have to set the LED print head width by technical function No.26. (Refer to table 2.9.1, TF No.26)

## 5.2.1 Confirmation Items

The clock frequency and power voltage of the machine are not possible to adjust in the field. However, their measurement procedures are described here for confirmation of clock frequency and each voltage.

1) Clock Frequency

- Measurement point: R51 board; LC3-3 pin and ground terminal
- Specification: 20.000 MHz ± 50 PPM

Note: If the counter does not read with 20.000 MHz, replace with a new crystal oscillator (X1).

2) +5V DC Voltage (SUB)

- Measurement point: R51 board; CN7-12 pin and ground terminal
- Specification: +5.2V ± 4%

3) +5V DC Voltage

- Measurement point: R51 board; CN7-2 & 3 pin and ground terminal
- Specification: +5.1V ± 4%

4) –8V DC Voltage

- Measurement point: R51 board; CN7-9 pin and ground terminal
- Specification: –12V to –6.5V

5) +24V DC Voltage

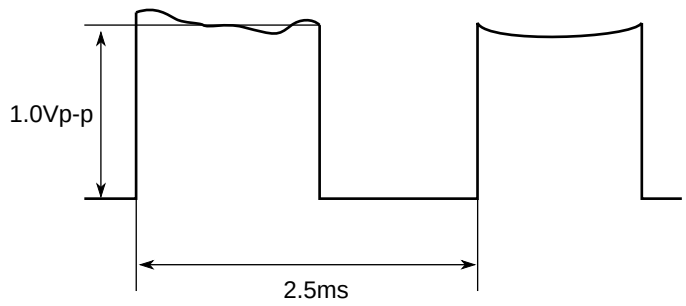
- Measurement point: R51 board; CN7-1 pin and ground terminal
- Specification: +24V ± 5%

6) +30V DC Voltage

- Measurement point: R51 board; CN7-8 pin and ground terminal
- Specification: +26V to +40V

7) Contact Image Sensor Output (SIG signal)

- Measurement point: R51 board; CN5-1 pin and ground terminal
- Specification: A waveform sample is shown below.
- Test chart: White sheet (A4 size)



## 5.2.2 Measurement

1) Trun the AC power OFF.
2) Carry out the disassembly procedure up to Cover assembly-top, Frame assembly-scanner, and Unit-printer.
   (Refer to the Mechanical Disassembly and Reassembly in Chapter 4.)
3) Connect extension cables to the R51 board.
4) Connect the frequency counter (for clock frequency), digital voltmeter (for power voltage) and Oscilloscope (for SIG signal). See figure 5.2.1.
5) Turn AC power ON.
   Main power supply is set to "ON" (PC1 ON) by loading the document on the cover-top. (except +5V SUB)
6) Measurement
7) Turn the AC power OFF.
8) Reverse the disassembly procedures.

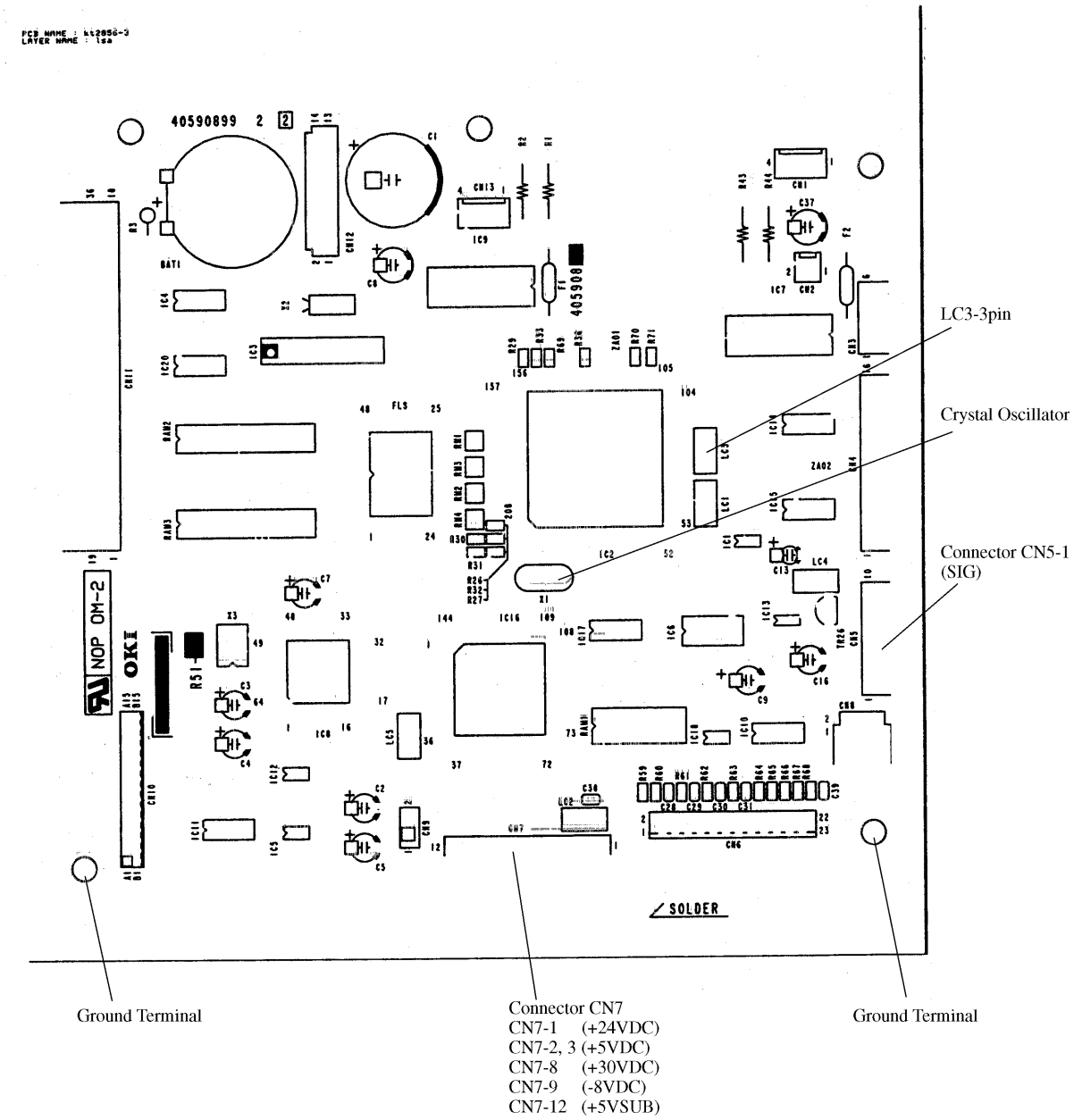



**Figure 5.2.1 Measurement Points on R51 Board**

# *CHAPTER 6*

# *CLEANING AND MAINTENANCE*

## 6.1 Replacement of Consumable

The user (or service personnel) is required to replace the following items as consumable parts.

**(1) User side**

| No. | Part name | Expected Use Before Replacement | Reference Item No. in Fig.6.1 |
|---|---|---|---|
| 1 | Toner Cartrige | 1,875 sheets/4% duty<br>(ITU-T document sample No.1)<br>(For the second or later cartridge to a new I/D Unit)<br>* The first toner cartridge installed in a new I/D unit will have a decreased yield. | (1) |
| 2 | I/D Unit<br>(Image drum unit) | 4,500 sheets: 1 page/job, 8,000 sheets: 3 page/job, 10,000 pages/continuous | (2) |

**(2) Service personnel side**

| No. | Part name | Expected Use Before Replacement | Reference Item No. in Fig.6.2 |
|---|---|---|---|
| 1 | Fuser Unit | 30,000 sheets | (3) |
| 2 | Separation Rubber | The Separation Rubber will not require replacement for at least 30,000 documents fed. | (4) |

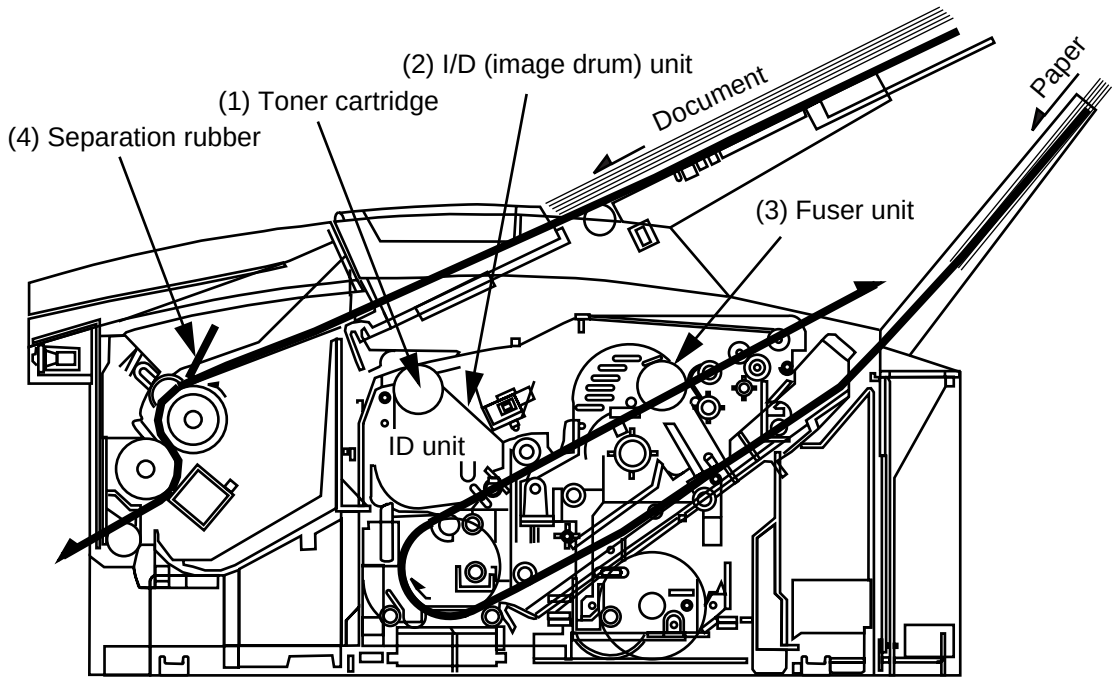



**Figure 6.1 Consumable Parts**

### (3) Others

**Table 6.1 Reliability**

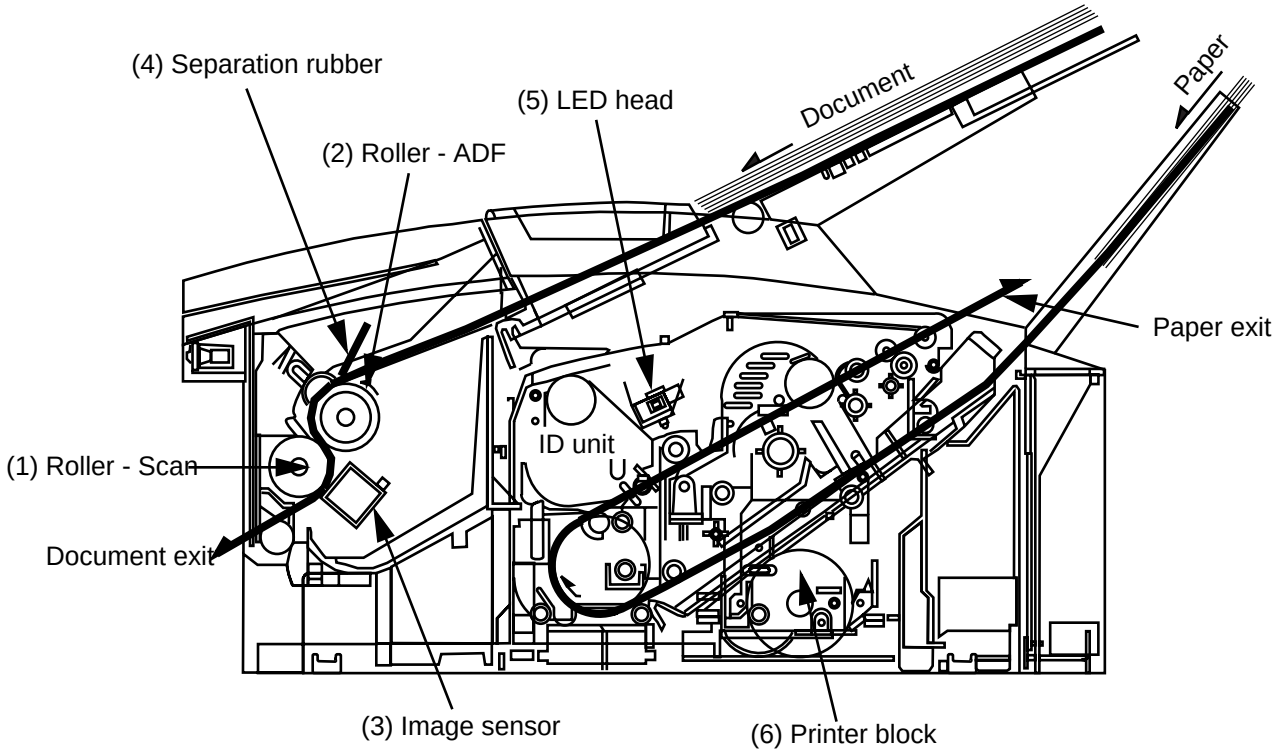
| No. | Item | Specifications |
|---|---|---|
| 1 | Document feeder | Jam occurrence and misfeeds in the automatic document feeder will be less than one in 500 operations for all specified documents. |
| 2 | Recording paper feeder | Jam occurrence in the automatic paper feeder will be less than one in 1,500 operations and misfeeds will be less than one in 500 operations for all specified recording paper. |
| 3 | MTBF | The MTBF for the overall machine will exceed 3,000 hours of actual operation.<br><br>The MTBF will be measured at a confidence level of 95% under controlled laboratory conditions.<br><br>The MTBF will be based on 50% transmit and 50% receive activities. |
| 4 | Battery (for RTC) | 5 years<br>Lithium battery : Not rechargeable |

## 6.2 Routine Inspection

Basically, the routine inspection of following items is performed about half-yearly (or every one year) after the machine is installed. The description of routine inspection is shown in Table 6.2.

**Table 6.2 Routine Inspection**

| No. | Part name | Expected Use Before Replacement | Reference Item No. in Fig.6.2 |
|---|---|---|---|
| 1 | Roller-scan | Clean with water. | (1) |
| 2 | Roller-ADF | Clean with water.<br>If the surface of this roller becomes dirty and the dirt causes misfeeding of documents, perform this cleaning. | (2) |
| 3 | Contact Image Sensor | Check for accumulation of paper dust, etc.<br>Clean with ethyl alcohol if necessary. | (3) |
| 4 | Separation Rubber | Clean with water.<br>If this rubber is worn out, replace this rubber. (every one year) | (4) |
| 5 | LED print head | Clean the surface of the head by moving the tissue paper back and forth several times. | (5) |
| 6 | Printer unit | Clean the inside of the printer unit by using a cloth moisturized with cold water. | |
| 7 | Lubrication | Apply silicone grease to the following parts:<br>a. Gears (every one year) | |
| 8 | Cleaning | Remove materials that have fallen from outside, if any. | |




**Fifure 6.2 Parts of Routine Inspection**

## 6.3 Printer Counter Display/Clear

***Note***: The fonts displayed on the LCD operation panel may differ from the fonts written this manual.

**1. Purpose**

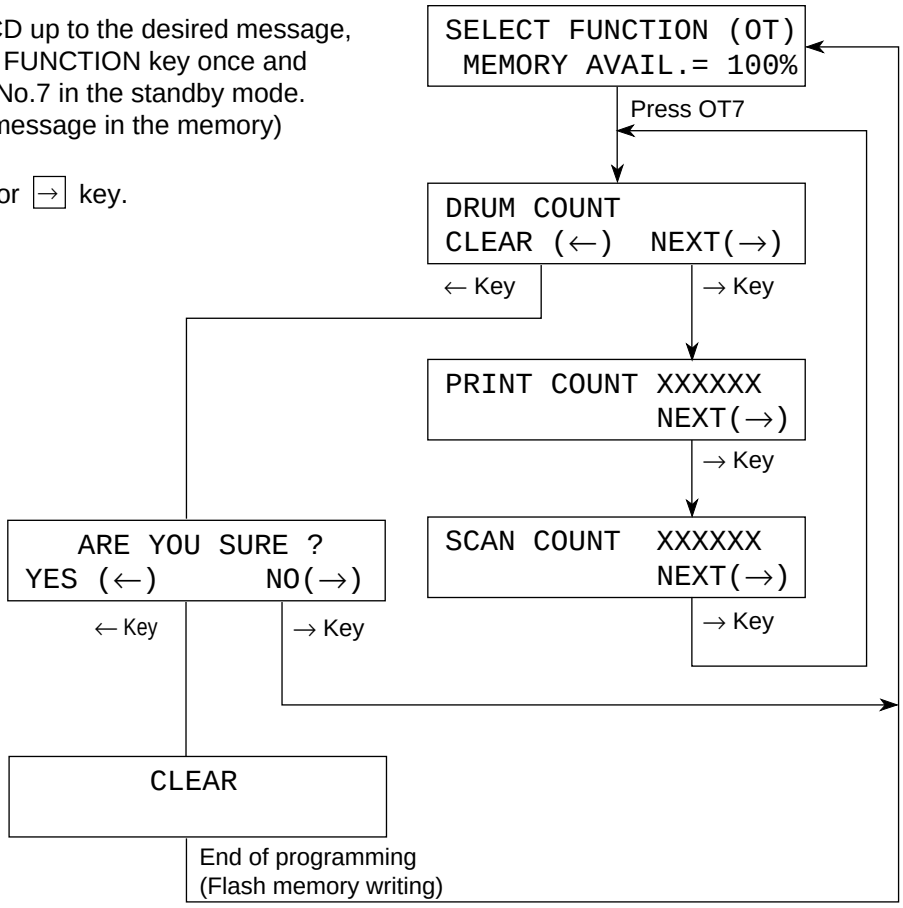
A user can clear the image drum unit and check some of the counters (such as the print counter, scan counter) by using the ← key or → key.

**2-1. Procedure**

The following shows the case when the service bit has been set OFF & TONER COUNT CLEAR = OFF.

**Operations:** **The display shows:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No.7 in the standby mode. (In case of no message in the memory)
- Press [←] key or [→] key.




***Note:*** Clear Operation

No. of print counter and scan counter (pages) will appear but cannnot be cleared by user.
User can clear only DRUM counter.
After having cleared the drum counter, warning message will be disappeared.

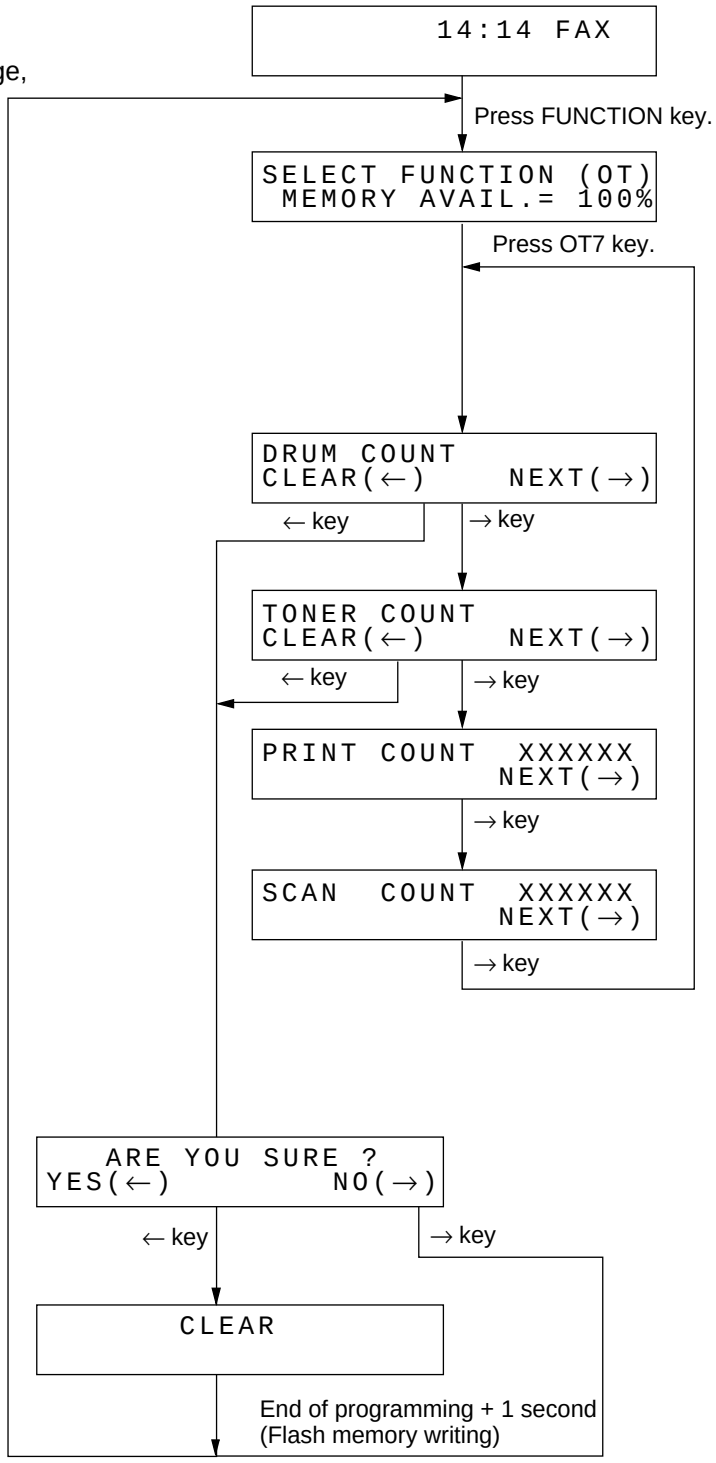
**2-2. Procedure**

The following shows the case when the service bit has been set OFF & TONER COUNT CLEAR = ON.

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 7 in the standby mode. (In case of no message in the memory)
- Press ← key or → key.

**The display shows:**




***Note:*** Clear Operation

No. of print counter and scan counter (pages) will appear but cannot be cleared by user.
User can clear DRUM counter and TONER counter.
After having cleared the drum counter, warning message will be disappeared.

## 6.4 Printer Counter Display/Clear

**1. Purpose**

The service personnel can clear and check the following data:

- Image Drum
- Toner
- Image Drum (Total)
- Print
- Scan

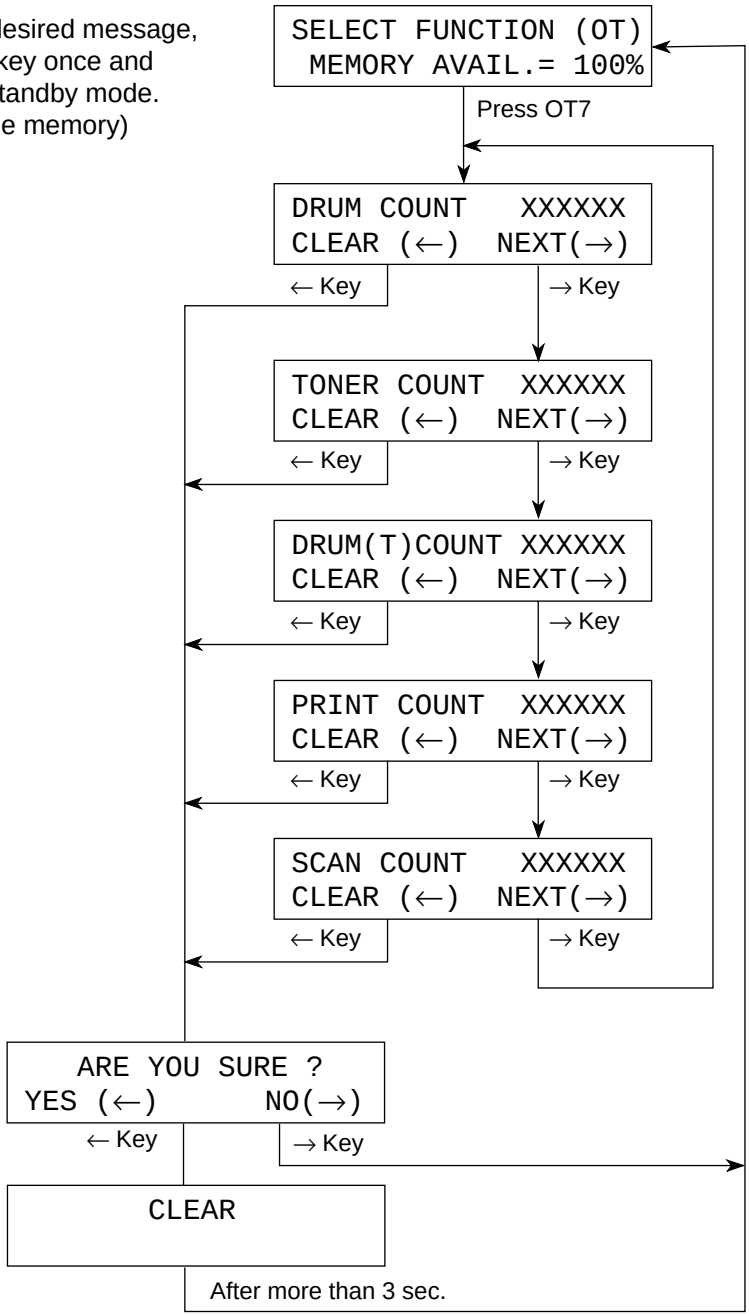
**2. Procedure**

The following shows the case when the service bit has been set ON.

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and one-touch key No. 7 in the standby mode. (In case of no message in the memory)
- Press [←] key or [→] key.

**The display shows:**




***Note:*** DRUM (T) will be used to know the total in-use life of the machine.

## 6.5 Self-diagnosis Test

**1. Purpose**

To check ROMs, RAMs and printing function.

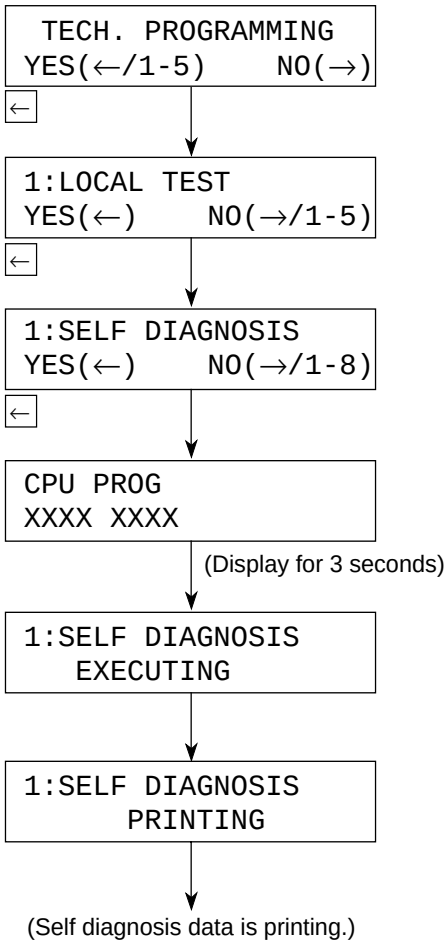
**2. Procedure**

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in the memory)
- Press ← key.
- Press ← key.
- Press ← key to activate self-diagnosis.

(Figure 6.5.1 shows the printed data.)

**The display shows:**



- Test report will be automatically printed out with the following items:

a) Pattern 1 — All white (32 lines)

b) Pattern 2 — Stair pattern (32 lines in each step)

c) Pattern 3 — All black (32 lines)

d) Pattern 4 — Alternate printing of black dots and white dots (32 lines x 2)

e) Pattern 5 — All white (32 lines)

f) CPU-ROM VERSION

| | | |
|---|---|---|
| CPU-ROM | In case CPU-ROM is good. | HASH OK |
| | In case CPU-ROM is not good. | HASH NG |
| CPU-RAM | In case CPU-RAM is good. | OK |
| | In case CPU-RAM is not good. | NG |

g) PROG VERSION

| | | |
|---|---|---|
| PROG | In case PROG is good. | HASH OK |
| | In case PROG is not good. | HASH NG |

h) LANGUAGE VERSION

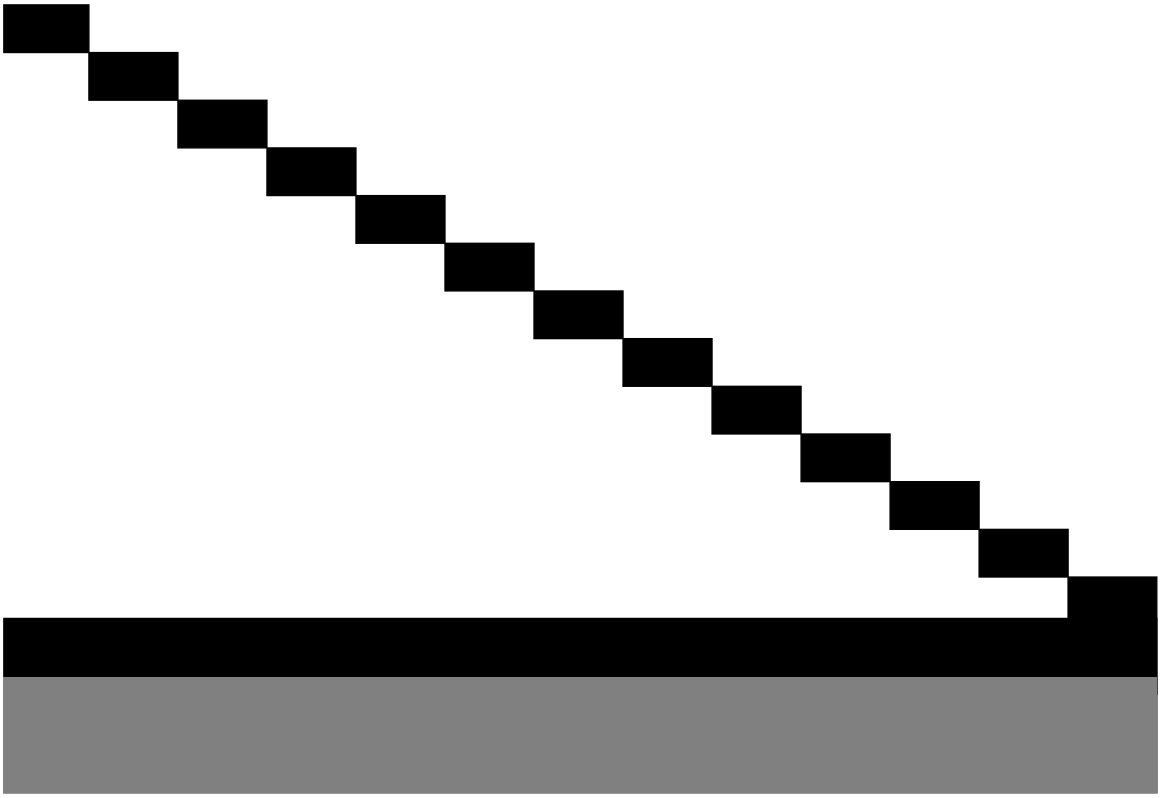
| | | |
|---|---|---|
| LANGUAGE | In case LANGUAGE is good. | HASH OK |
| | In case LANGUAGE is not good. | HASH NG |

i) DEFAULT VERSION

| | | |
|---|---|---|
| DEFAULT | In case DEFAULT is good. | HASH OK |
| | In case DEFAULT is not good. | HASH NG |

| | | |
|---|---|---|
| j) RAMi | In case RAMi is good. | OK |
| | In case RAMi is not good. | NG |
| | ("i" is RAM's number) | |

- Figure 6.5.1 shows a printed sample.



```
   CPU-ROM   VERSION   AA00
             HASH      OK    DACD
   CPU-RAM             OK
   PROG      VERSION   AA00
             HASH      OK    3142

   LANGUAGE  VERSION   LL10
             HASH      OK    3F06
   DEFAULT   VERSION   DD10
             HASH      OK    A683
*1 RAM1                2.5M  OK
*2 RAM2                OK
   DEFAULT TYPE        01    07/01/1998 10:30


*1 marked item is shown for condition of all RAM except EXCEED RAM.
*2 marked item is shown to SRAM for EXCEED.
```

**Figure 6.5.1 Self-diagnosis Data**

## 6.6 Sensor Calibration Test

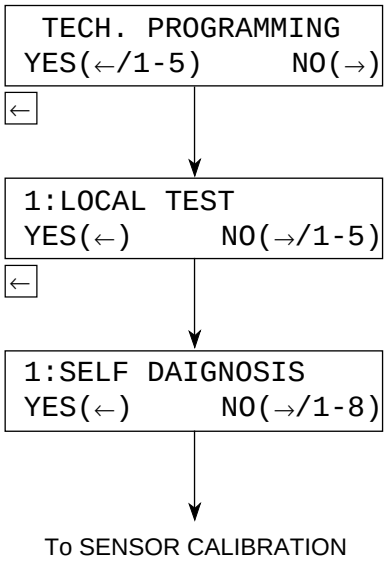
**1. Purpose**

To adjust the linearity of output levels of contact image sensor.

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in the memory)
- Press ← key.
- Press ← key.

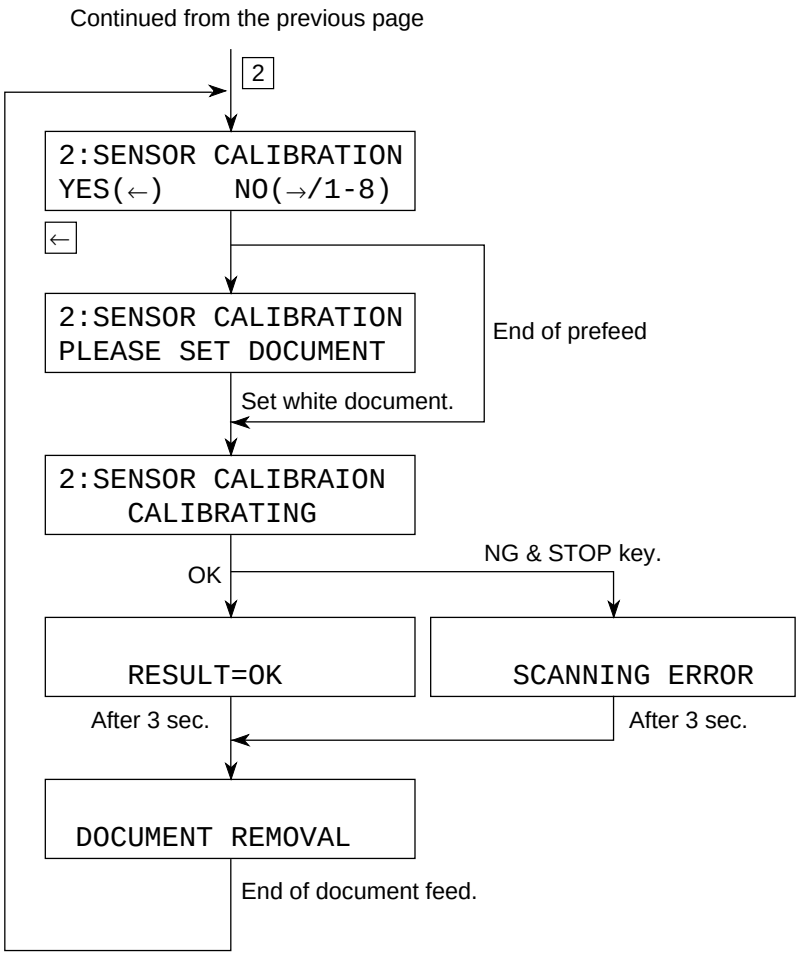
**The display shows:**



**Operations:**

- Enter "2".
- Press [←] key.
- Load document(s).
  For adjustment of levels, use white plain bond paper(s) of NA Letter or A4 size.
- Observe and check the document feed operation.
  Check that the followings do not occur:
  - Document skew.
  - Multiple document feeding.
  - No feeding.

**The display shows:**




***Note:*** After adjustment of levels, check the copy quality by copying test charts or documents.

## 6.7 LEDs Test

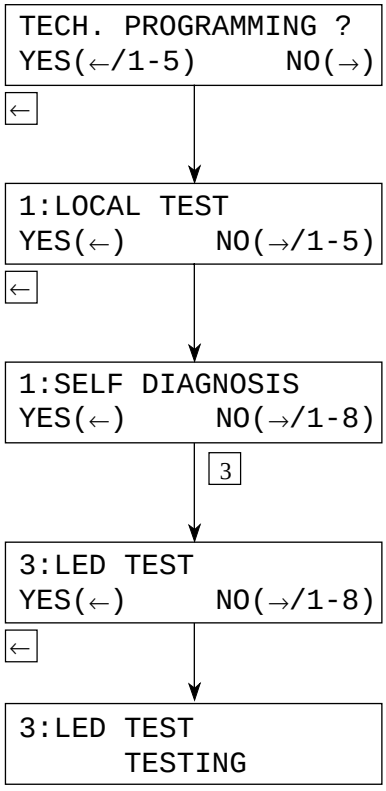
**1. Purpose**

To check all LEDs on operation panel by lighting.

**2. Procedure**

**Operations:** **The display shows:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once and COPY key twice in the standby mode. (In case of no message in memory)




- Press ← key.
- Press ← key.
- Enter "3".
- Press ← key.
- Observe and check that LEDs are blinking.
  - All LEDs will be sequentially turned on for one second in the following order.

(Start)

→ ALARM → DARK → NORMAL → LIGHT → STD → FINE →
all LED off ← all LED on ← PHOTO ← EX.FINE ←

1 second interval.

- After the checking, press STOP key.

## 6.8 Tone Send Test

**1. Purpose**

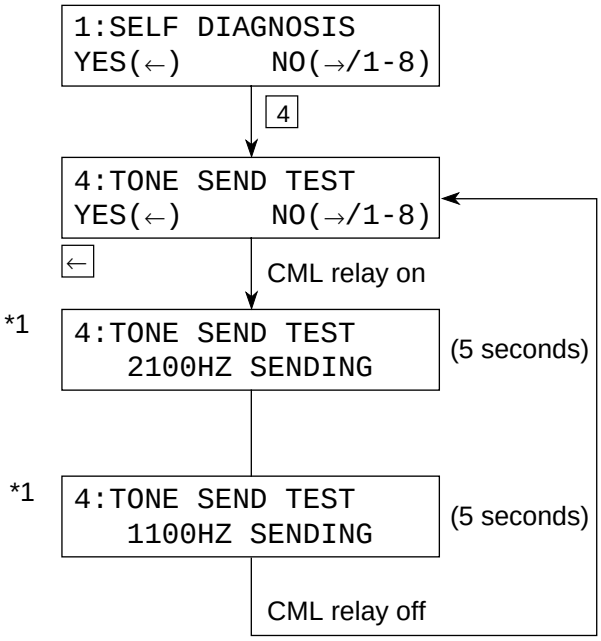
To send the G3 tonal frequencies to the line.

**2. Procedure**

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter "4".
- Press [←] key.
- After the checking, press STOP key or end of the transmission.

**The display shows:**




*1: When indicating "2100Hz or 1100Hz SENDING", extend the tone send test for 30 more seconds by pressing the START key.

## 6.9 High-speed Modem Send Test

**1. Purpose**

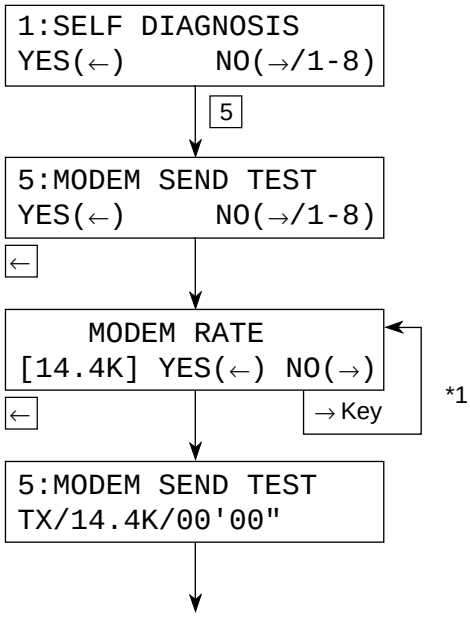
To check the telephone line quality in combination with a remote station programmed to the high-speed modem receive test mode.

**2. Procedure**

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter "5".
- Press [←] key.
- Set MODEM rate by [→] key.
- Press [←] key.
  All zero data will be continuously sent.
- After the test, press STOP key.

**The display shows:**




(For detail, see Fig. 6.9.1)

*1: → 14.4K → 12.0K → 9.6KT (V.17) → 7.2KT (V.17) → 9.6K (V.29) → 7.2K (V.29) ← 4.8K ← 2.4K ← 0.3K ←

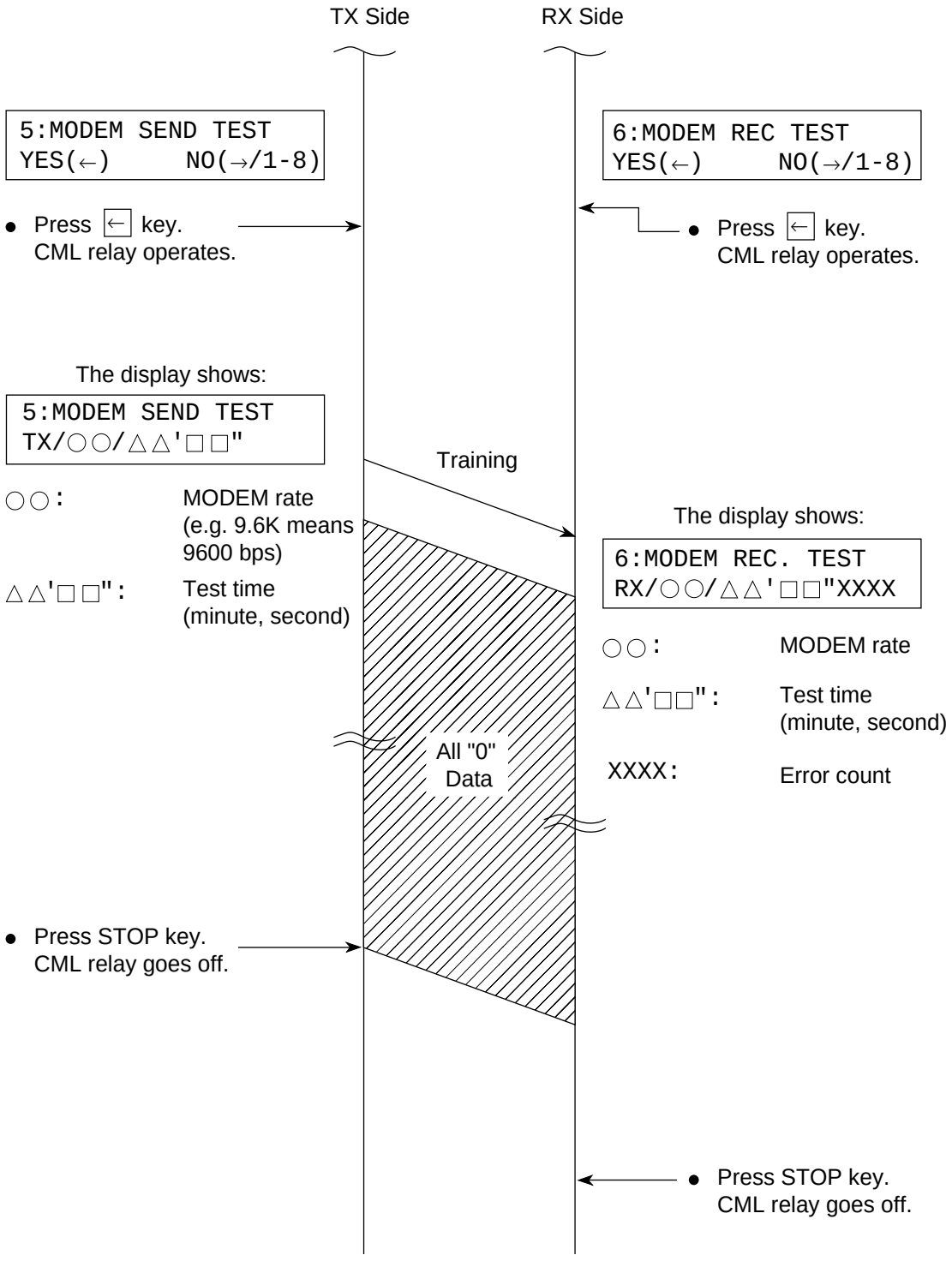



**Figure 6.9.1 High-speed Modem Send and Receive Test**

## 6.10 High-speed Modem Receive Test

**1. Purpose**

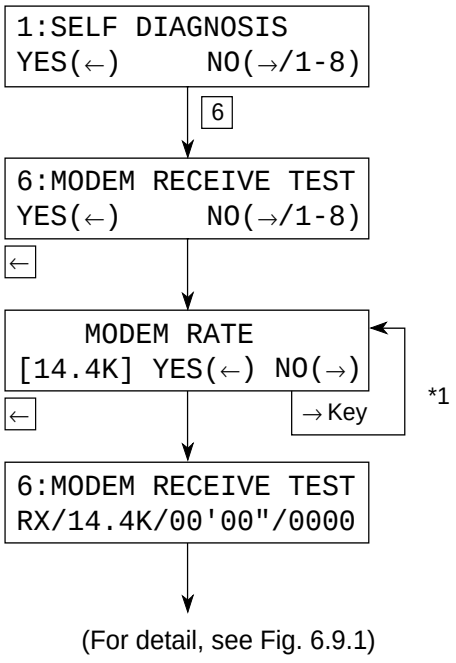
To check the telephone line quality in combination with a remote station programmed to the high-speed modem send test mode.

**2. Procedure**

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and ← key twice. (In case of no message in memory)
- Enter 6.
- Press ← key.
- Set MODEM rate by → key.
- Press ← key.
- After the test, press STOP key.

**The display shows:**




(For detail, see Fig. 6.9.1)

*1: → 14.4K → 12.0K → 9.6KT (V.17) → 7.2KT (V.17) → 9.6K (V.29) → 7.2K (V.29) → 4.8K → 2.4K →

## 6.11 MF Send Test

**1. Purpose**

To send the multi-frequencies of tone dialling to the line.

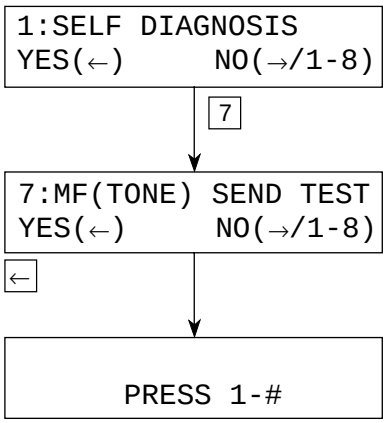
**2. Procedure**

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter 7.
- Press [←] key.
- Press 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, * or # key. MF tone corresponding to the key pressed will be sent until the next key is pressed.
- After the test, press STOP key.
  Frequencies of MF tones are as follows:

| | |
|---|---|
| 1 | 697 Hz/1209 Hz |
| 2 | 697 Hz/1366 Hz |
| 3 | 697 Hz/1477 Hz |
| 4 | 770 Hz/1209 Hz |
| 5 | 770 Hz/1366 Hz |
| 6 | 770 Hz/1477 Hz |
| 7 | 852 Hz/1209 Hz |
| 8 | 852 Hz/1366 Hz |
| 9 | 852 Hz/1477 Hz |
| 0 | 941 Hz/1366 Hz |
| * | 941 Hz/1209 Hz |
| # | 941 Hz/1477 Hz |

**The display shows:**



## 6.12 Tone (TEL/FAX)

**1. Purpose**

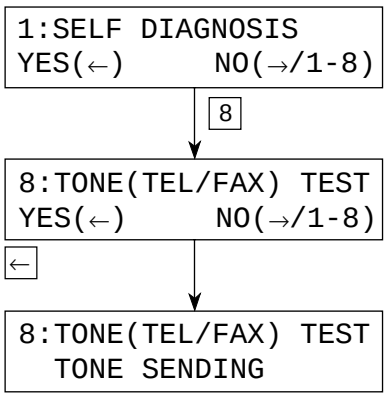
To check the pseudo-ring back tone of TEL/FAX automatic switching.

**2. Procedure**

**Operations:**

- To bring the LCD up to the desired message, press SELECT FUNCTION key once, COPY key twice and [←] key twice. (In case of no message in memory)
- Enter 8.
- Press [←] key.
- After the test, press STOP key.

**The display shows:**



## 6.13 Protocol Dump Data Printing

**1. Purpose**

To analyze the transmitted/received G3 protocol signals.

**2. Procedure**

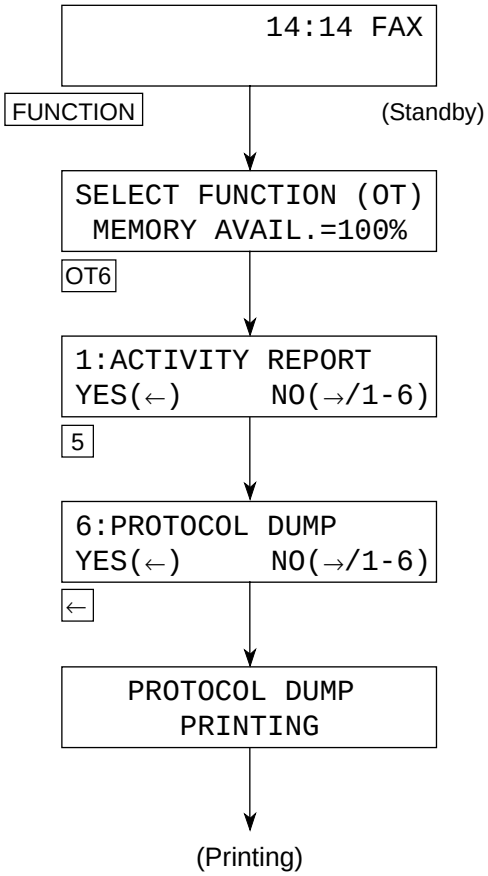
- Manual print-out of the last communication.

(a) Manual print-out

**Operations:**

- Press SELECT FUNCTION key, provided that the service bit is ON.
- Press one-touch key No.6
- Enter 6.
- Press ← key.

**The display shows:**



## 3. Dump data description

1) Data sample
   Figure shows the printed data as a sample.

# PROTOCOL DUMP

```
                                                                07/01/1998  19:00
                                                                ID=OKI TAKASAKI


      DATE     TIME     S,R-TIME      DISTANT STATION ID    MODE     PAGES     RESULT

      04/19    14:49    *01'33"    OKI SHIBAURA(6412)     CALLING    01     OK      0000

FCF
TX |                          TSI  DCS               PPS  EOP                DCN
RX | NSF  CSI  DIS                          CFR                      MCF

TX |
RX |

TX |
RX |

TX
DIS                                              DTC
00 00 00 00 00 00 00 00 00                          00 00 00 00 00 00 00 00 00
DCS
00 00 00 00 00 00 00 00 00
NSF
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
NSS
FF C8 C4 00 00 84 80 30 40 E4 10 40 B8 39 20 0C 0C 0C 0C 30 82 4A AA 82 42 92 12 CA 04 92 D2 F2
80 40 80 10 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

RX
DIS
FF CB 01 00 73 17 22 00 00 00 00 00 00 00 00 00 00 00 00
DTC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
DCS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
NSF
FF C0 04 00 00 84 80 08 40 F4 10 40 F9 7D 20 0C 0C 0C 0C 90 F2 52 72 F2 12 04 92 D2 F2 80 F0 80
40 80 50 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00
NSS
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00
NSC
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00

RECEIVED CSI/CIG/TSI
FF C0 02 0C 0C 2C AC 04 4C 4C 04 AC 9C 2C 0C 04 04 04 04 04 04 04 04
TRANSMITTED CSI/CIG/TSI
FF C0 C2 2C CC 4C 8C 04 6C EC 2C AC 04 CC 0C 04 04 04 04 04 04 04 04

RECEIVED SEP/SUB
FF C0 02 0C 0C 2C AC 04 4C 4C 04 AC 9C 2C 0C 04 04 04 04 04 04 04 04
TRANSMITTED SEP/SUB
FF C0 C2 2C CC 4C 8C 04 6C EC 2C AC 04 CC 0C 04 04 04 04 04 04 04 04
```

**Figure 6.13.1 Protocol Dump Data (Sample: at transmitter side)**

## 4. Analysis from the data

The printed out data permits to analyze G3 facsimile communication protocol signals between two facsimile machines. Figure 6.13.2 shows the result of an analysis on the printed data referring to Figure 6.13.1 (Protocol dump data).

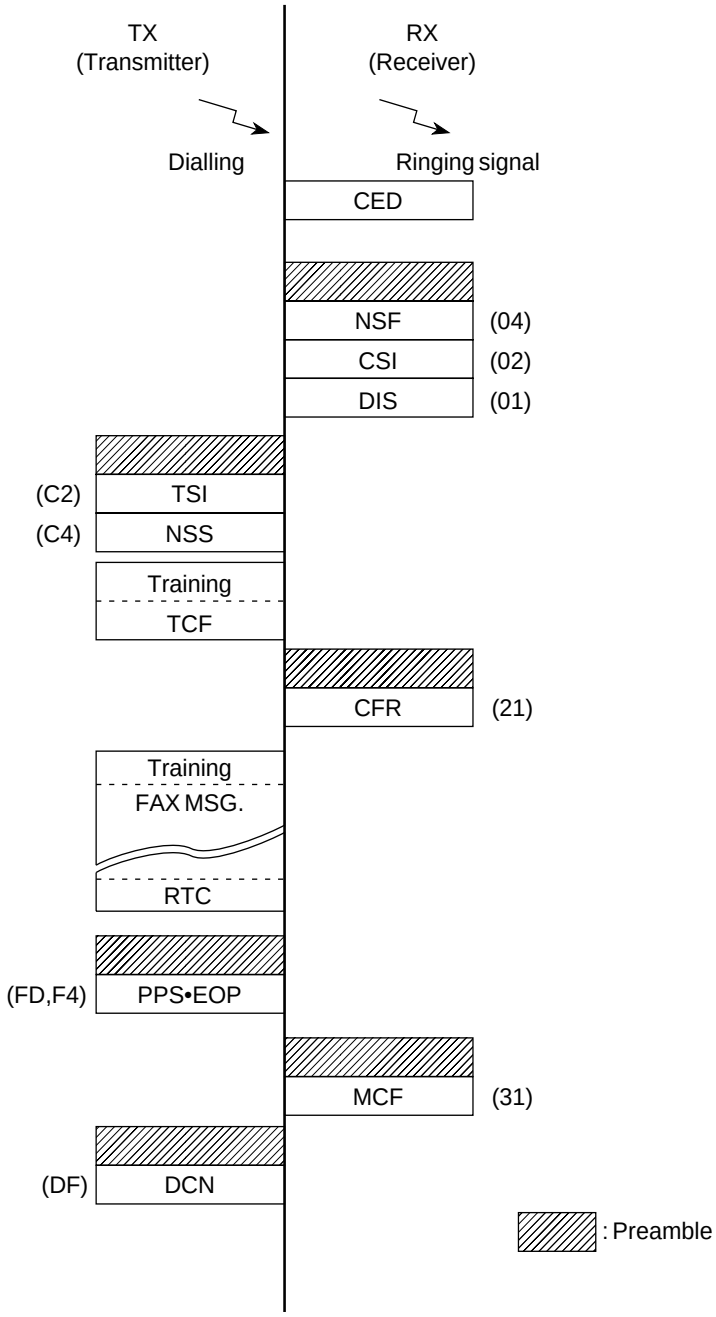



**Figure 6.13.2 Result of Analysis (Example)**

## 5. FCF (Facsimile Control Field) conversion table

Table 6.13.1 shows all FCF signals which are needed to analyze the printed out protocol dump data.

Some signals have two different hexadecimal codes in accordance with the calling party or called party.

**Table 6.13.1 FCF Signals Conversion Table**

| Abbreviation | Hex. Codes | | Description of function |
|---|---|---|---|
| NSF | 04 | | Non-Standard Facilities |
| CSI | 02 | | Called Subscriber Identification |
| DIS | 01 | | Digital Identification Signal |
| NSC | 84 | | Non-Standard Facilities Command |
| CIG | 82 | | Calling Subscriber Identification |
| DTC | 81 | | Digital Transmit Command |
| NSS | 44 | C4 | Non-Standard Set-Up |
| TSI | 42 | C2 | Transmitting Subscriber Identification |
| DCS | 41 | C1 | Digital Command Signal |
| CFR | 21 | A1 | Confirmation to Receive |
| MCF | 31 | B1 | Message Confirmation |
| FTT | 22 | A2 | Failure to Train |
| MPS | 72 | F2 | Multi-Page Signal |
| EOM | 71 | F1 | End of Message |
| EOP | 74 | F4 | End of Procedure |
| RTP | 33 | B3 | Retrain Positive |
| RTN | 32 | B2 | Retrain Negative |
| PIP | 35 | B5 | Procedure Interrupt Positive |
| PIN | 34 | B4 | Procedure Interrupt Negative |
| PRI-MPS | 7A | FA | Procedure Interrupt-MPS |
| PRI-EOM | 79 | F9 | Procedure Interrupt-EOM |
| PRI-EOP | 7C | FC | Procedure Interrupt-EOP |
| DCN | 5F | DF | Disconnect |
| CRP | 58 | D8 | Command Repeat |
| CTC | 48 | C8 | Continue to Correct |
| CTR | 23 | A3 | Response to Continue to Correct |
| EOR | 73 | F3 | End of Retransmission |
| ERR | 38 | B8 | Response to End of Retransmission |
| FCD | 60 | | Facsimile Coded Data |
| PPS | 7D | FD | Partial Page Signal |
| PPR | 3D | BD | Partial Page Request |
| RCP | 61 | | Return to Control for Partial Page |
| RNR | 37 | B7 | Receiver not Ready |
| RR | 76 | F6 | Receiver Ready |

## 6.14 System Reset

**1. Purpose**

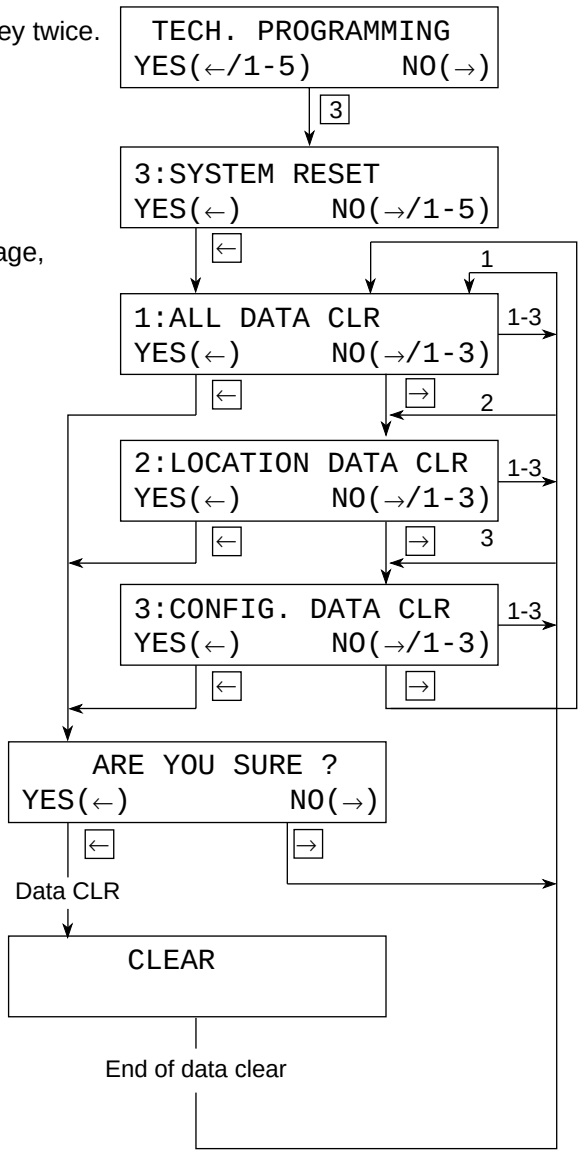
To clear or initialize the following data:
(a) Location data
(b) Configuration data (default)

**2. Procedure**

**Operations:** **The display shows:**

- Press SELECT FUNCTION key, COPY key twice. (In case of no message in the memory)
- Enter 3.
- To bring the LCD up to the desired message, press [←] key and [→] key.

**Note:** ALL DATA CLEAR is to clear or initialize (a) to (b).



## 6.15 Service Codes

1) The service code can be printed on Activity Report to recognize the result of each communication.

2) The activity report indicates the code ”0000", should a communication terminates on normal status as a service code.

3) The activity report indicates one of the codes of “90XX”, should a communication terminates on abnormal status, as an error code.

4) Besides the above codes of “90XX”, the following codes are prepared for identifying an abnormal status in details.

-21XX: For error codes in Group 3 transmission phase B
-29XX: For error codes in Group 3 reception phase B
-39XX: For error codes in Group 3 reception phase C
-41XX: For error codes in Group 3 transmission phase D
-49XX: For error codes in Group 3 reception phase D

**Table 6.15.1 (1/2) Service Code List**

| Code | Description |
|---|---|
| 0000 | Successful end of communication. |
| 1080 | STOP key has been pressed while calling a remote fax. |
| 10A2 | Busy tone detected. |
| 14C0 | Dial tone not detected. |
| 14C1 | Line current not detected. |
| 14C2 | Calling-and-waiting for line connection time out. |
| 14C3 | Dialling limit time out. |
| 21A0 | Received signal other than DIS/DTC. |
| 21A1 | Contents of received DIS/DTC are faulty. |
| 21A3 | Each time there is no response from the receiver for sending TCF three times. |
| 21A4 | TCF fall back is not possible. |
| 21A5 | Received signal other than the desired signal in response to sending TCF. |
| 21B0 | Transmitter tried to transmit by confidential transmission function but the remote fax has not the capability of confidential reception. |
| 21B1 | Transmitter tried to transmit by Broadcast Initiate function but the remote fax has not the broadcast capability. |
| 21C0 | In Closed Network setting, TSI/CIG/CSI is either not received or, if received, it is not authorized one. |
| 21E0 | Contents of CM/JM are faulty at transmission side. |
| 21E1 | Phase 2 time out at transmission side. |
| 21E2 | Phase 3 time out at transmission side. |
| 21E3 | Training time out of phase B control channel at transmission side. |
| 29B6 | In Confidential Reception, the mail box specified by transmitter is not set up and open. |
| 29C1 | In closed Network setting, TSI/CSI is either not received or, if received, it is not authorized one. |
| 29E0 | Contents of CM/JM are faulty at receive side. |
| 29E1 | Phase 2 time out at receive side. |
| 29E2 | Phase 3 time out at receive side. |
| 29E3 | Training time out of phase B control channel at receive side. |
| 39A0 | The number of continuous-error lines have exceeded the specified limit. |
| 39A1 | The number of random-error lines have exceeded the specified limit. |
| 39B0 | Memory Overflow has occurred while receiving in memory. |
| 39B1 | Memory Overflow occurred during Confidential Reception. |
| 39C0 | DECODER hardware error. (cannot reproduce picture) |

**Table 6.15.1 (2/2) Service Code List**

| Code | Description |
|---|---|
| 39C1 | DECODER hardware error. (cannot detect end of picture) |
| 41A0 | There was no response each time in response to the three post commands. |
| 41A6 | Received signal other than the desired signal in responce to the post command. |
| 41A9 | Fall back in Phase C is not possible. |
| 41C8 | T5 time out. |
| 41CE | Received negative signal in response to the post command. |
| 41E0 | Control chanel data. Time out in Phase D. |
| 49CC | Received signal other than the desired signal in response to RNR. |
| 49CD | Command not received in response to RNR. |
| 49E0 | Data time out of |
| 49E1 | Fall back in Phase C is not possible. |
| 60A0 | Broadcast completed. |
| 6803 | DCN received in response to NSF/DIS without sending a single picture. |
| 9080 | Pressed STOP key. |
| 9081 | T1 time out. |
| 9082 | T2 time out. |
| 9083 | T3 time out. |
| 9084 | No recording paper. |
| 9087 | Document jam. |
| 9088 | 60-minute or 70-minute time out. |
| 9089 | Document length has exceeded its maximum limit. |
| 908E | Recording paper jam. |
| 9090 | Received DCN. |
| 90B1 | Picture memory hash error. |
| 90C1 | Document removed prior to transmission. |
| 90C6 | Normal or error-free lines not received for 13 seconds. |
| 90C7 | Error frame protocol received. |
| 90D4 | Hardware error in transmission system. (response of modem not detected) |
| 90D5 | ENCODER error. (Picture storage fault) |
| 90F0 | Option (2'nd tray) error. |
| 90F1 | Fan motor error. |
| 90F2 | Fuser error. |
| 90F3 | Recording paper size error. |
| 90F4 | Cover open. |

# *CHAPTER 7*

# *TROUBLESHOOTING AND REPAIR FOR OKIOFFICE84/OKIFAX 4500*

OKIFAX 1050/2350/2450/5200/5300/5500/5600/4100/4500/OKIOFFICE44/84 Extension cable lists

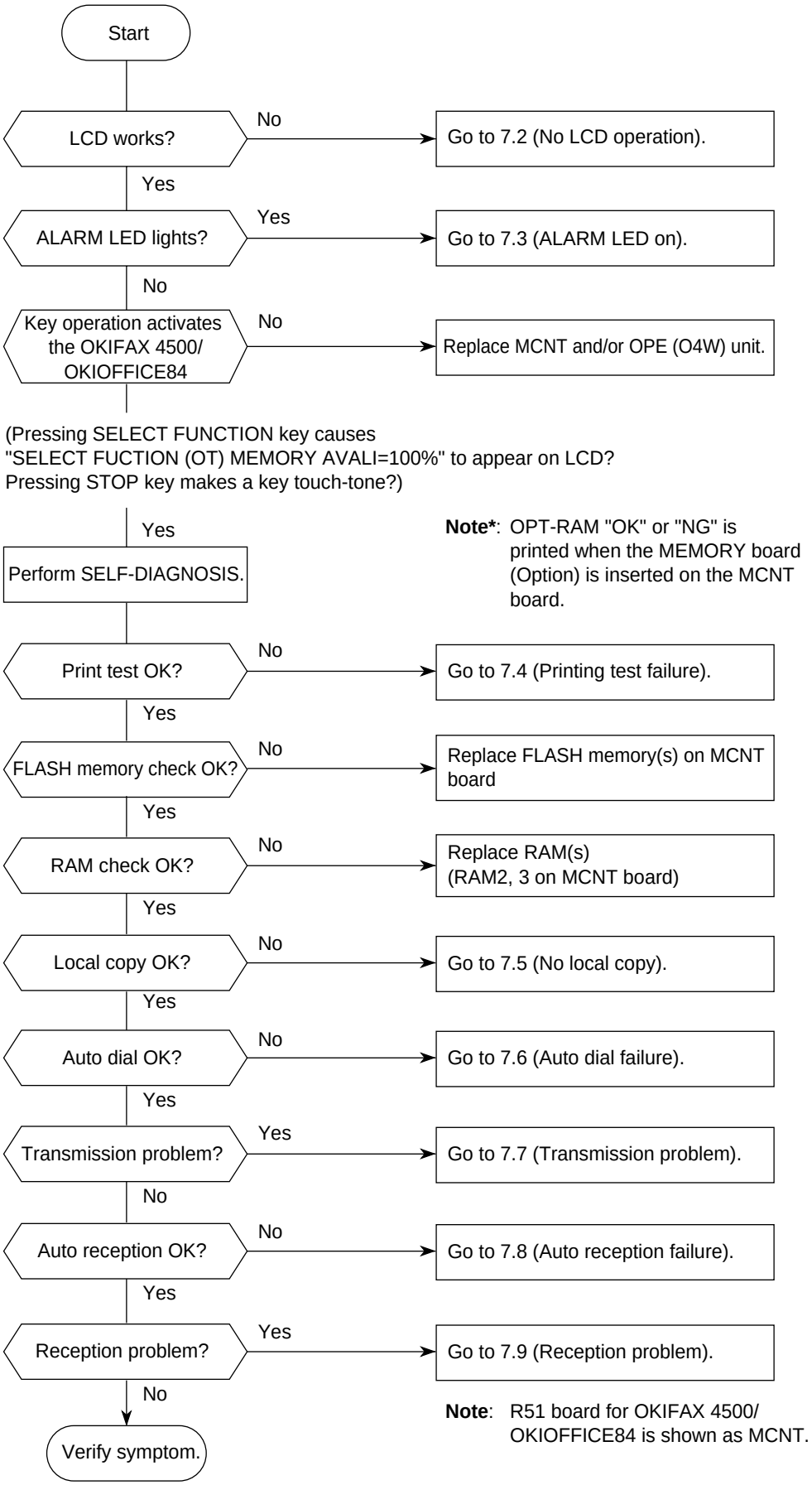
| No. | Oki Parts Number | Description | Remarks | OKIFAX 1050 | OKIFAX 2350 | OKIFAX 2450 | OKIFAX 5200/5300 | OKIFAX 5500/5600 | OKIOFFICE44 OKIFAX 4100 | OKIOFFICE84 OKIFAX 4500 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4YS4111-5655P001 | Extension cable (OPE) | | O | O | O | ••• | ••• | ••• | ••• |
| 2 | 4YS4111-5656P001 | Extension cable (Sensor) | | O | O | O | O | O | O | O |
| 3 | 4YS4111-5657P001 | Extension cable (PC1, 2) | | O | O | O | O | O | O | O |
| 4 | 4YS4111-5658P001 | Extension cable (Speaker) | | O | O | O | O | O | O | O |
| 5 | 4YS4111-5659P001 | Extension cable (PWU) | | O | O | O | O | O | ••• | ••• |
| 6 | 4YS4111-5660P001 | Extension cable (FAN) | | O | O | O | O | O | ••• | ••• |
| 7 | 4YS4111-5661P001 | Extension cable (S-motor) | | O | ••• | ••• | ••• | ••• | O | ••• |
| 8 | 4YS4111-5662P001 | Extension cable (D-motor) | | O | ••• | ••• | ••• | ••• | ••• | ••• |
| 9 | 4YS4111-5663P001 | Extension cable (R-motor) | | O | ••• | ••• | ••• | ••• | ••• | ••• |
| 10 | 4YS4111-5664P001 | Extension cable (S-motor) | | ••• | O | O | O | O | O | O x 2 |
| 11 | 4YS4111-5665P001 | Extension cable (D-motor) | | ••• | O | O | O | O | ••• | ••• |
| 12 | 4YS4111-5666P001 | Extension cable (R-motor) | | ••• | O | O | O | O | ••• | ••• |
| 13 | 4YS4111-5667P001 | Extension cable (2nd) | | O | O | O | O | O | ••• | ••• |
| 14 | 238A1071P0006 | SUMI card (LED head) | | ••• | O | O | O | O | O | O |
| 15 | 40331401YS | Connection code; extension (OPE) | OPE/MCNT | ••• | ••• | ••• | O | O | O | O |
| 16 | 40331501YS | Connection code; extension (MPSU) | MCNT/MPSU (Power) | ••• | ••• | ••• | ••• | ••• | O | O |
| 17 | 40331602YS | Connection code; extension (Heater) | HEATER AC/PSU | ••• | ••• | ••• | ••• | ••• | O | O |
| 18 | 40331801YS | Connection code; extension (Clutch) | CLUTCH/MCNT | ••• | ••• | ••• | ••• | ••• | O | O |
| 19 | 40332001YS | Connection code; extension | FUJI CARD: MCNT/HVPS | ••• | ••• | ••• | ••• | ••• | O | O |
| 20 | 40332201YS | Connection code; extension (SPSU) | SPSU (Sub-power)/MCNT | ••• | ••• | ••• | O | O | ••• | ••• |
| 21 | 40332301YS | Connection code; extension (PSU) | PSU (Power)/SPSU (Sub-power) | ••• | ••• | ••• | O | O | ••• | ••• |
| 22 | 40331901YS | Connection code; extension (Transformer) | Transformer/SPSU (Sub-power) | ••• | ••• | ••• | O | O | ••• | ••• |
| 23 | 40780201YS | Connection Flat (P6L) | MCNT/P6L | ••• | ••• | ••• | ••• | ••• | ••• | O |

This chapter contains:

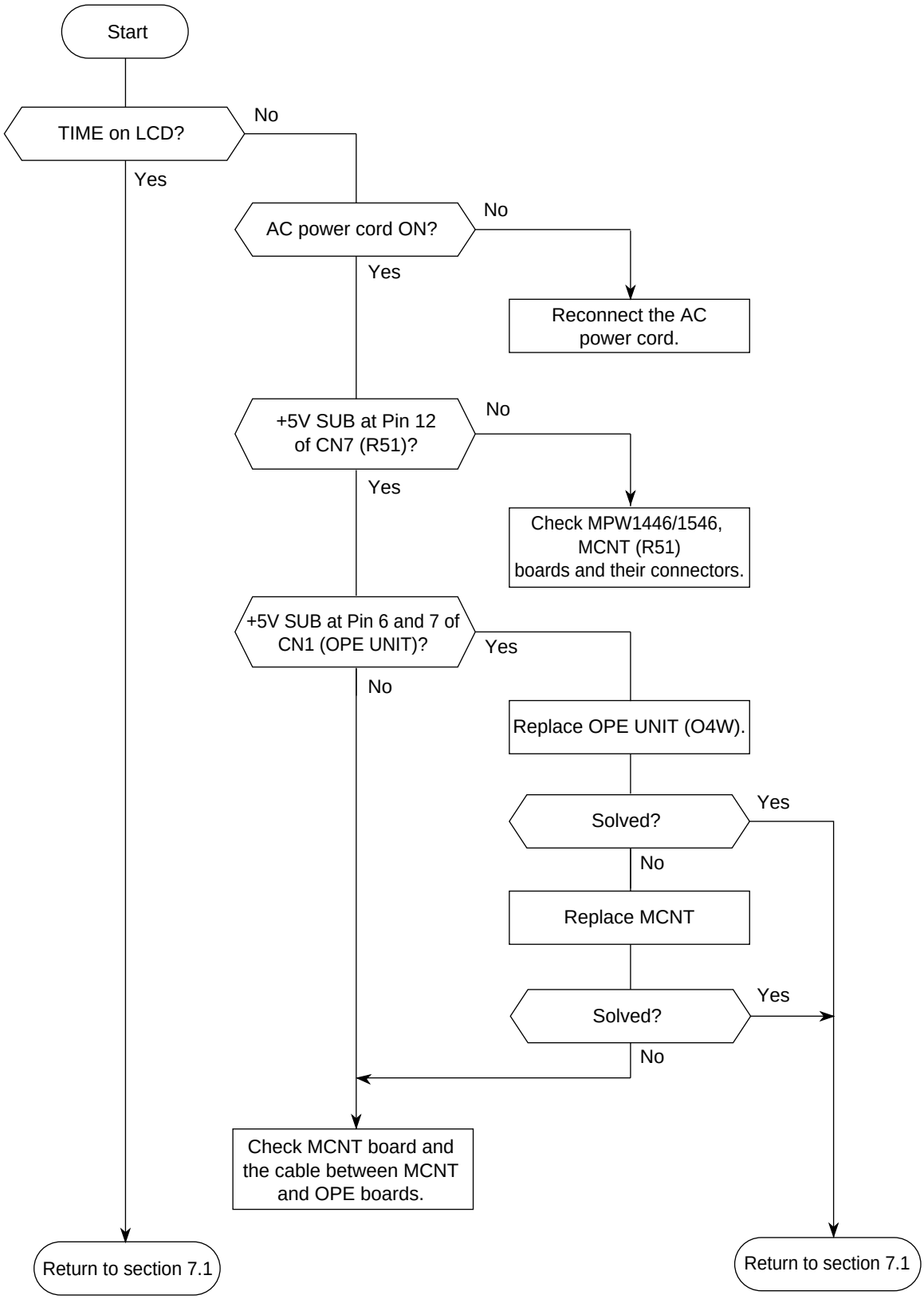
(a) Troubleshooting flow charts related to general operations
(b) Troubleshooting flow charts by test operations
(c) Troubleshooting flow charts placing an emphasis on mechanical portions


| Section No. | Name of Flow Chart | (a) | (b) | (c) | Page |
|---|---|---|---|---|---|
| 7.1 | Overall troubleshooting flow chart | ○ | ○ | | 7-2 |
| 7.2 | No LCD operation | ○ | | | 7-3 |
| 7.3 | ALARM LED on | ○ | | | 7-4 |
| 7.4 | Printing test failure | ○ | ○ | | 7-5 |
| 7.5 | No local copy | ○ | ○ | | 7-6 |
| 7.6 | Auto dial failure | ○ | | | 7-7 |
| 7.7 | Transmission problem | ○ | | | 7-8 |
| 7.8 | Auto reception failure | ○ | | | 7-10 |
| 7.9 | Reception problem | ○ | | | 7-11 |
| 7.10 | Sensor calibration test | | ○ | | 7-13 |
| 7.11 | LED test | | ○ | | 7-14 |
| 7.12 | Tone send test | | ○ | | 7-15 |
| 7.13 | High-speed modem test | | ○ | | 7-16 |
| 7.14 | MF (Tone) send test | | ○ | | 7-18 |
| 7.15 | Tone (TEL/FAX) send test | | ○ | | 7-19 |
| 7.16 | No acoustic line monitor | ○ | | | 7-20 |
| 7.17 | Power supply unit | ○ | | | 7-21 |
| 7.18 | No document feeding | | | ○ | 7-31 |
| 7.19 | Multiple document feeding | | | ○ | 7-32 |
| 7.20 | Document skew | | | ○ | 7-33 |
| 7.21 | Document jam | | | ○ | 7-35 |
| 7.22 | Printer unit | | | | 7-36 |

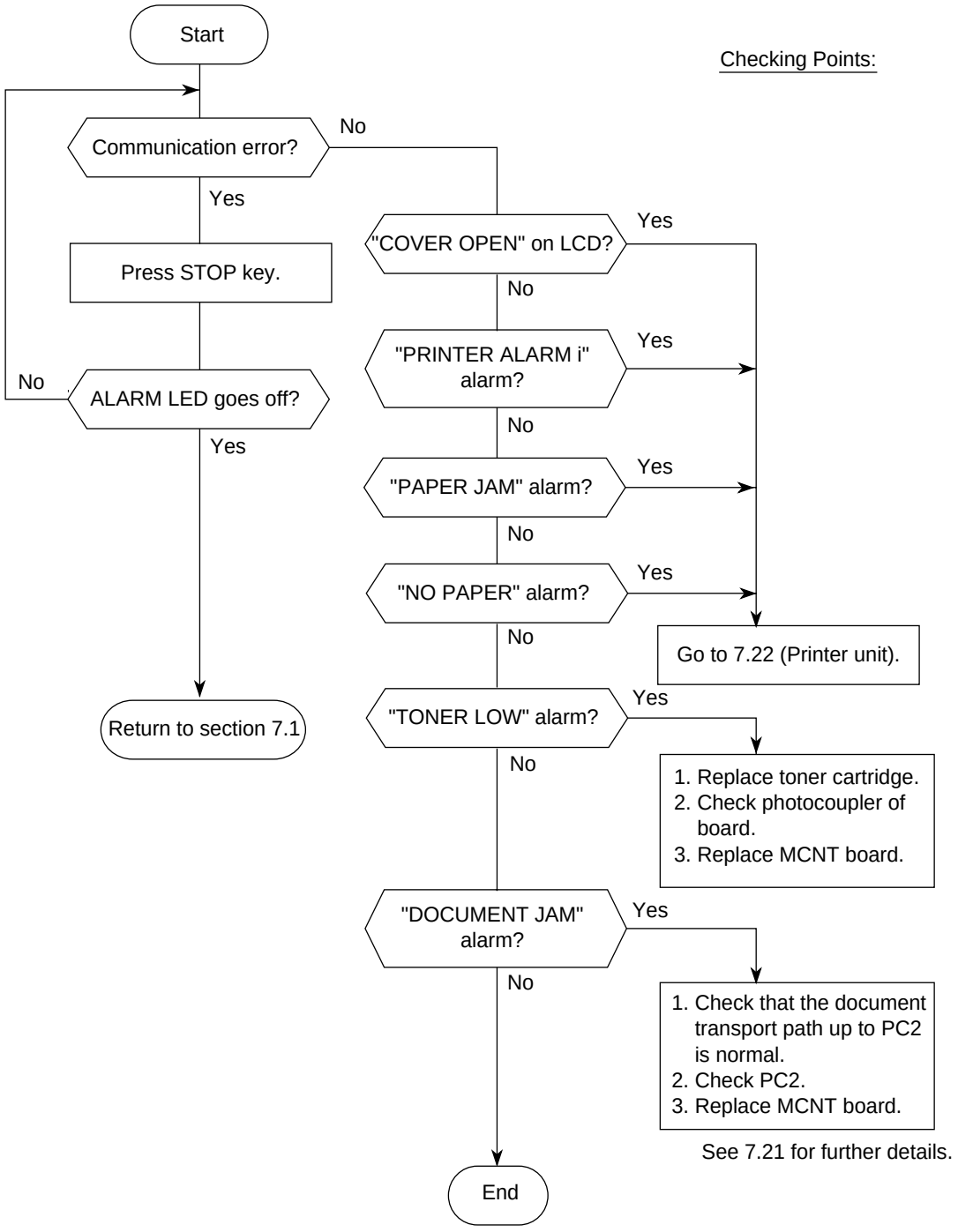
## 7.1 Overall Troubleshooting Flow Chart



## 7.2 No LCD Operation

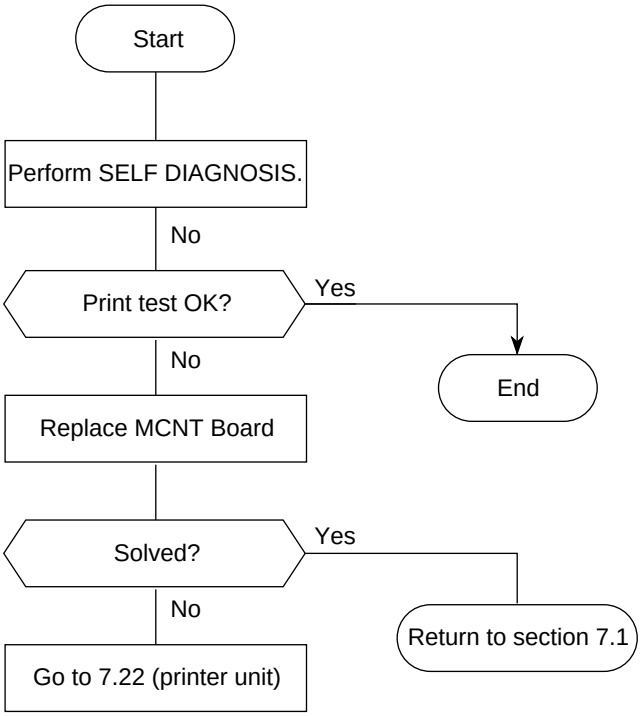


## 7.3 Alarm LED On

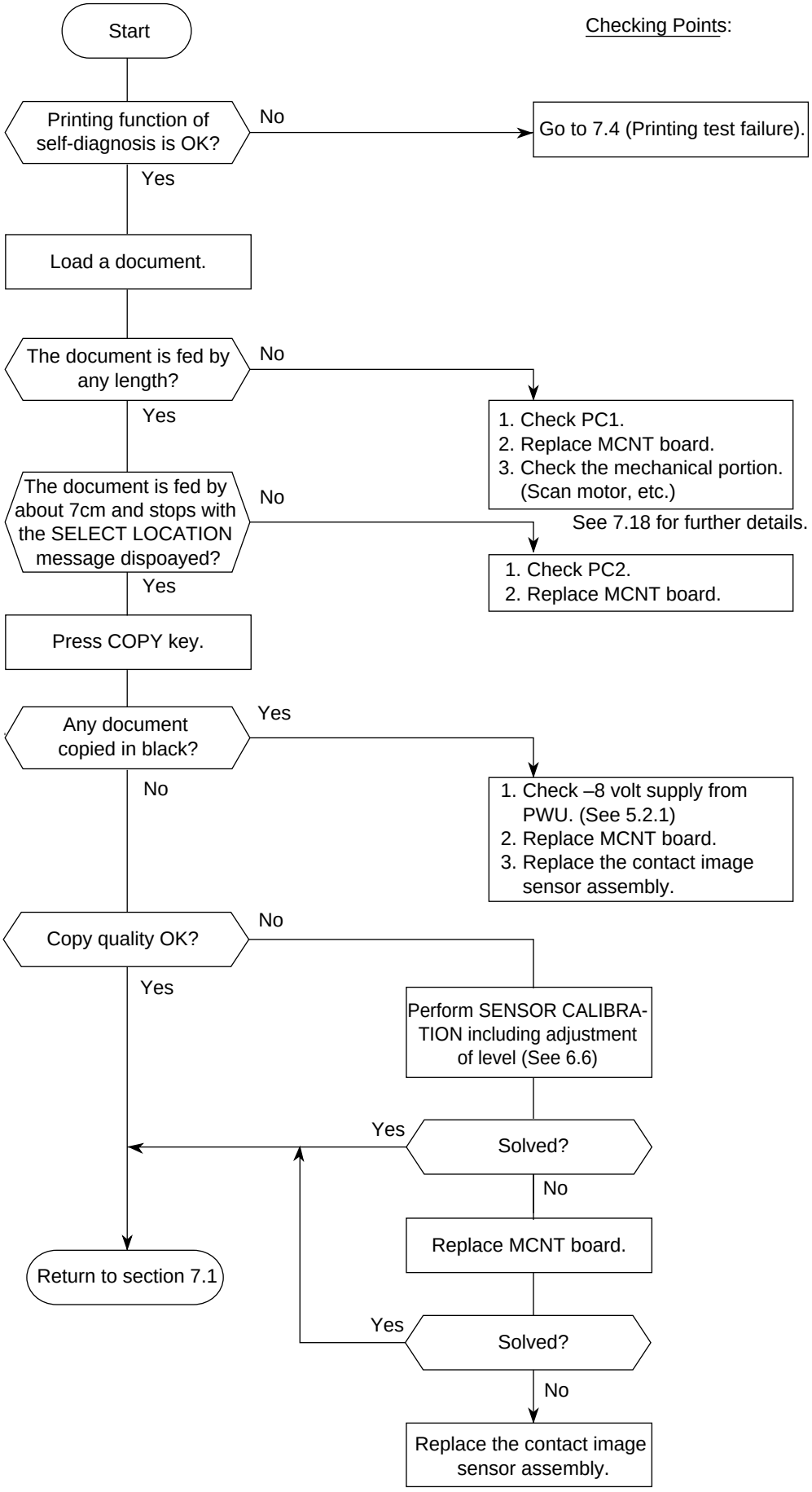



**Note*** : "PRINTER ALARM i" will be shown as follows:
PRINTER ALARM 2 and PRINTER ALARM 4.

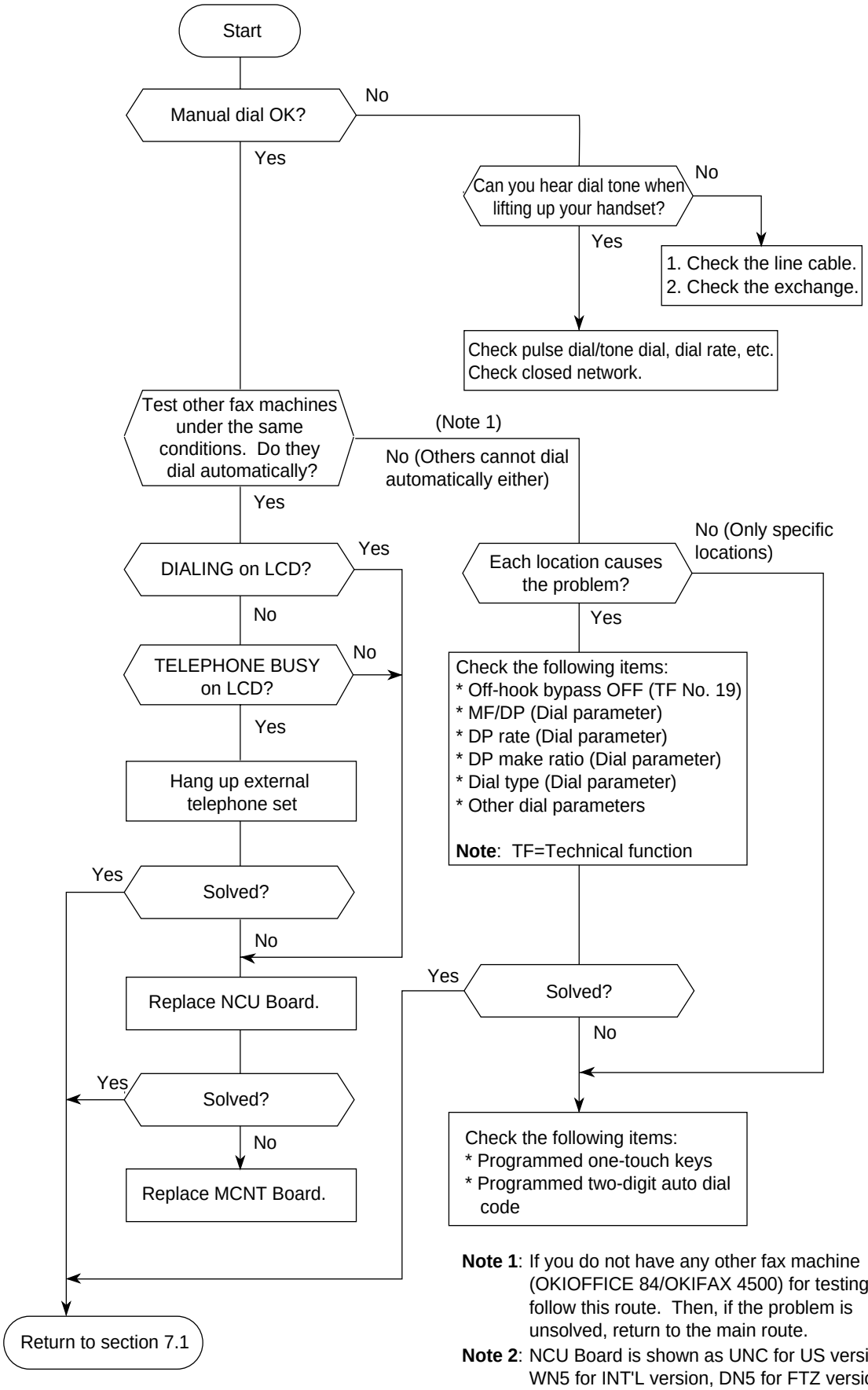
## 7.4 Printing Test Failure



## 7.5 No Local Copy



## 7.6 Auto Dial Failure

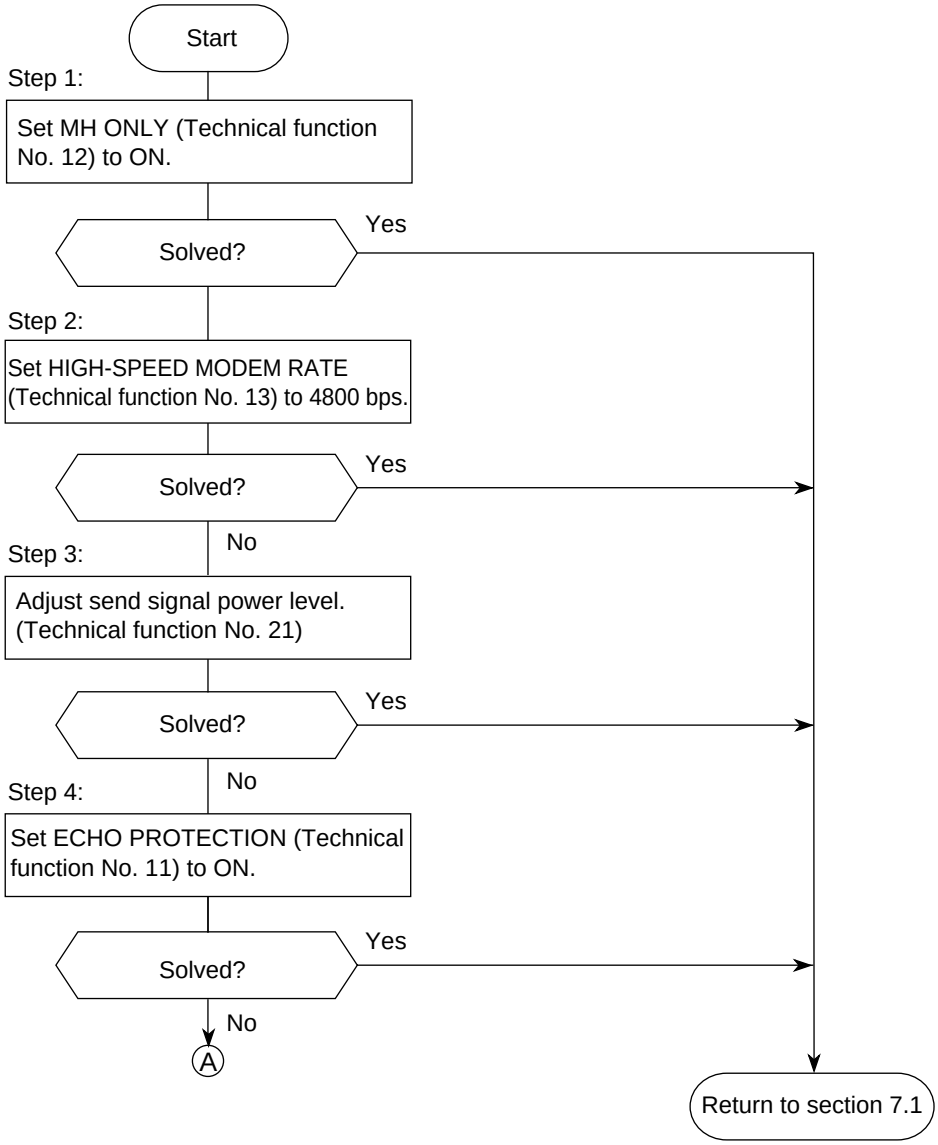


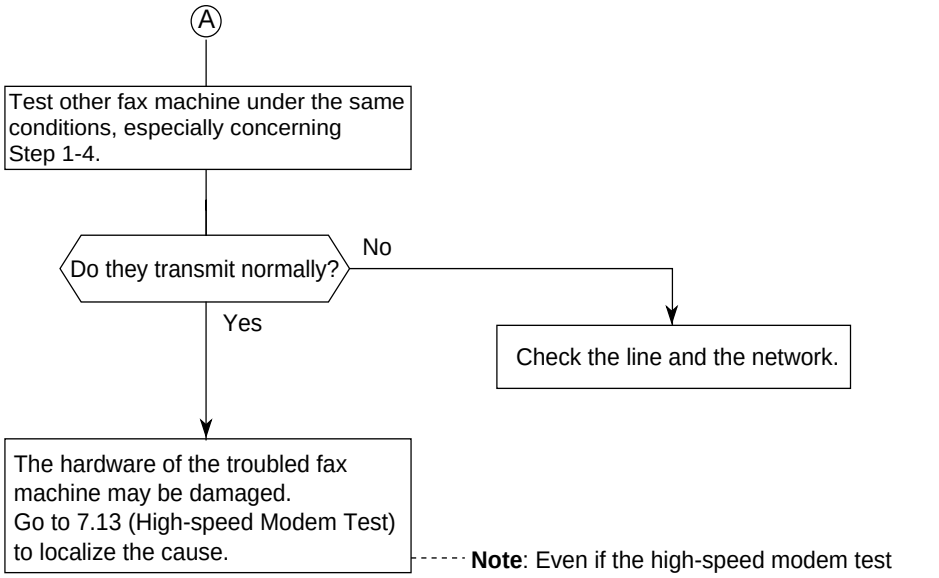

**Note 1**: If you do not have any other fax machine (OKIOFFICE 84/OKIFAX 4500) for testing, follow this route. Then, if the problem is unsolved, return to the main route.

**Note 2**: NCU Board is shown as UNC for US version, WN5 for INT'L version, DN5 for FTZ version and FN5 for France, and UK version.

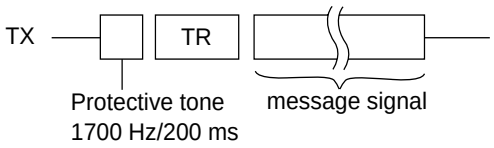
## 7.7 Transmission Problem

This section explains how to localize the cause of problems occurred after completion of connection with a remote station.

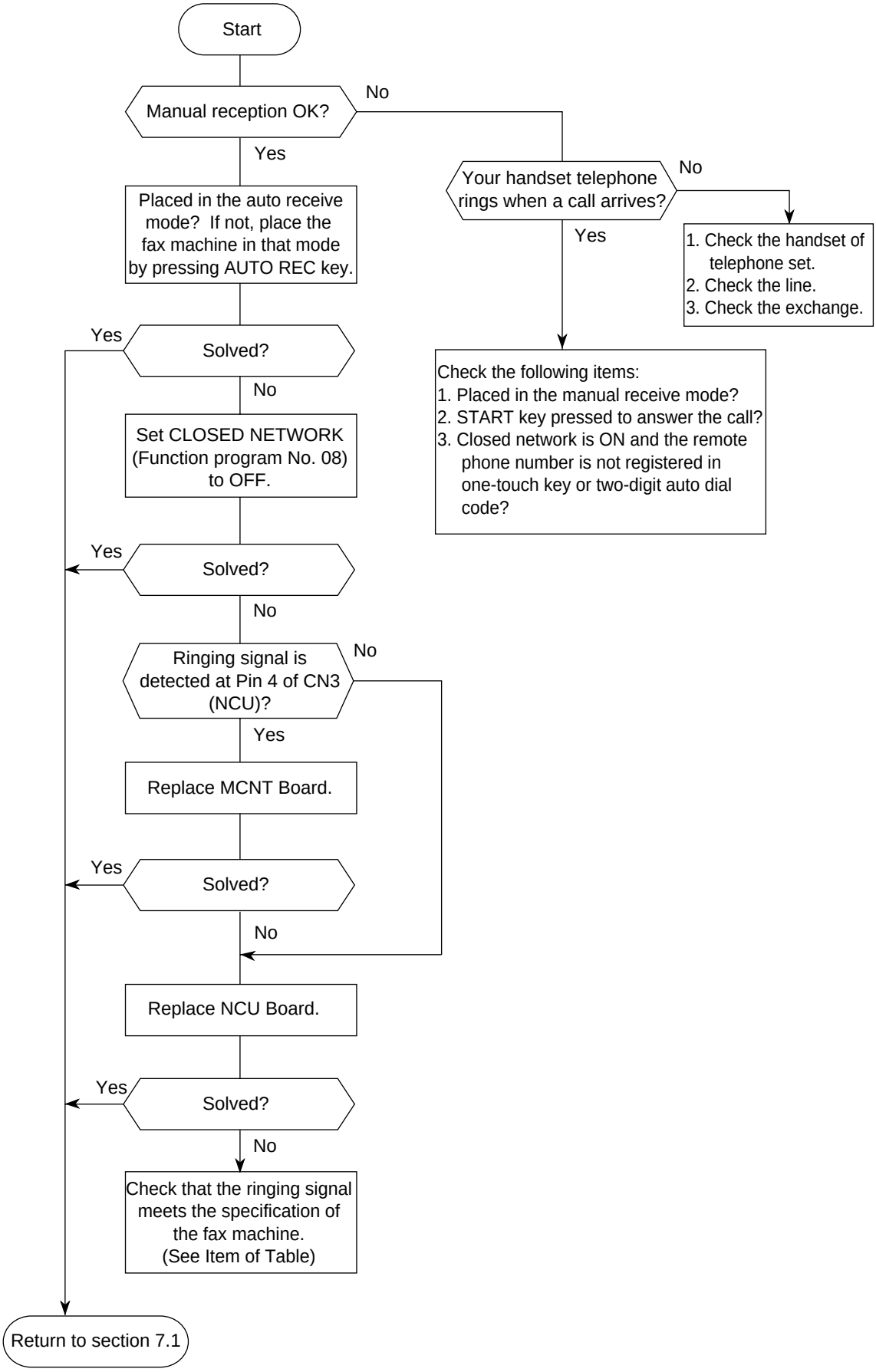



A
Test other fax machine under the same conditions, especially concerning Step 1-4.
Do they transmit normally?
No
Yes
Check the line and the network.
The hardware of the troubled fax machine may be damaged.
Go to 7.13 (High-speed Modem Test) to localize the cause.
Note: Even if the high-speed modem test results in success, 300 bps signal route remains unchecked. In that case, the most suspected unit is MCNT Board.

Description: Protective tone is 1700 Hz/200 ms.
This signal is added to training signal to protect the training signal against echo as follows.

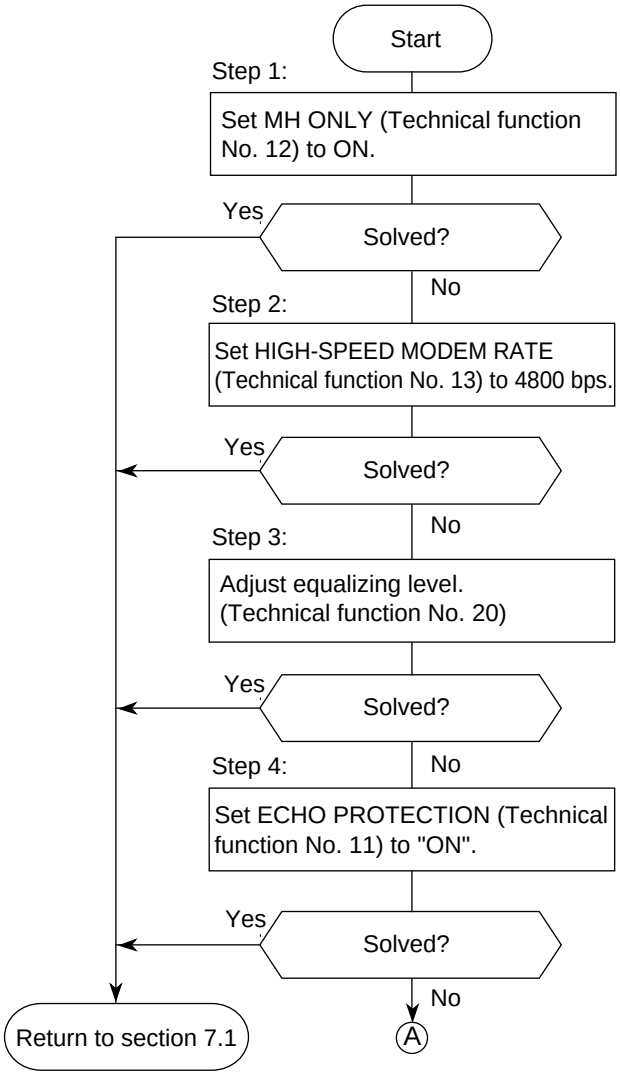


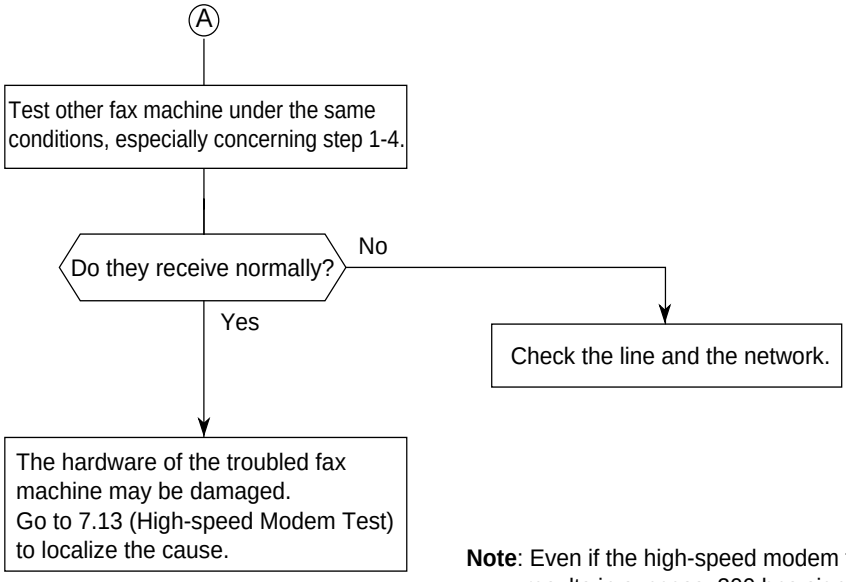
## 7.8 Auto Reception Failure


Start
Manual reception OK?
No
Yes
Your handset telephone rings when a call arrives?
No
Yes
1. Check the handset of telephone set.
2. Check the line.
3. Check the exchange.
Placed in the auto receive mode? If not, place the fax machine in that mode by pressing AUTO REC key.
Yes
Solved?
No
Check the following items:
1. Placed in the manual receive mode?
2. START key pressed to answer the call?
3. Closed network is ON and the remote phone number is not registered in one-touch key or two-digit auto dial code?
Set CLOSED NETWORK (Function program No. 08) to OFF.
Yes
Solved?
No
Ringing signal is detected at Pin 4 of CN3 (NCU)?
No
Yes
Replace MCNT Board.
Yes
Solved?
No
Replace NCU Board.
Yes
Solved?
No
Check that the ringing signal meets the specification of the fax machine. (See Item of Table)
Return to section 7.1

## 7.9 Reception Problem

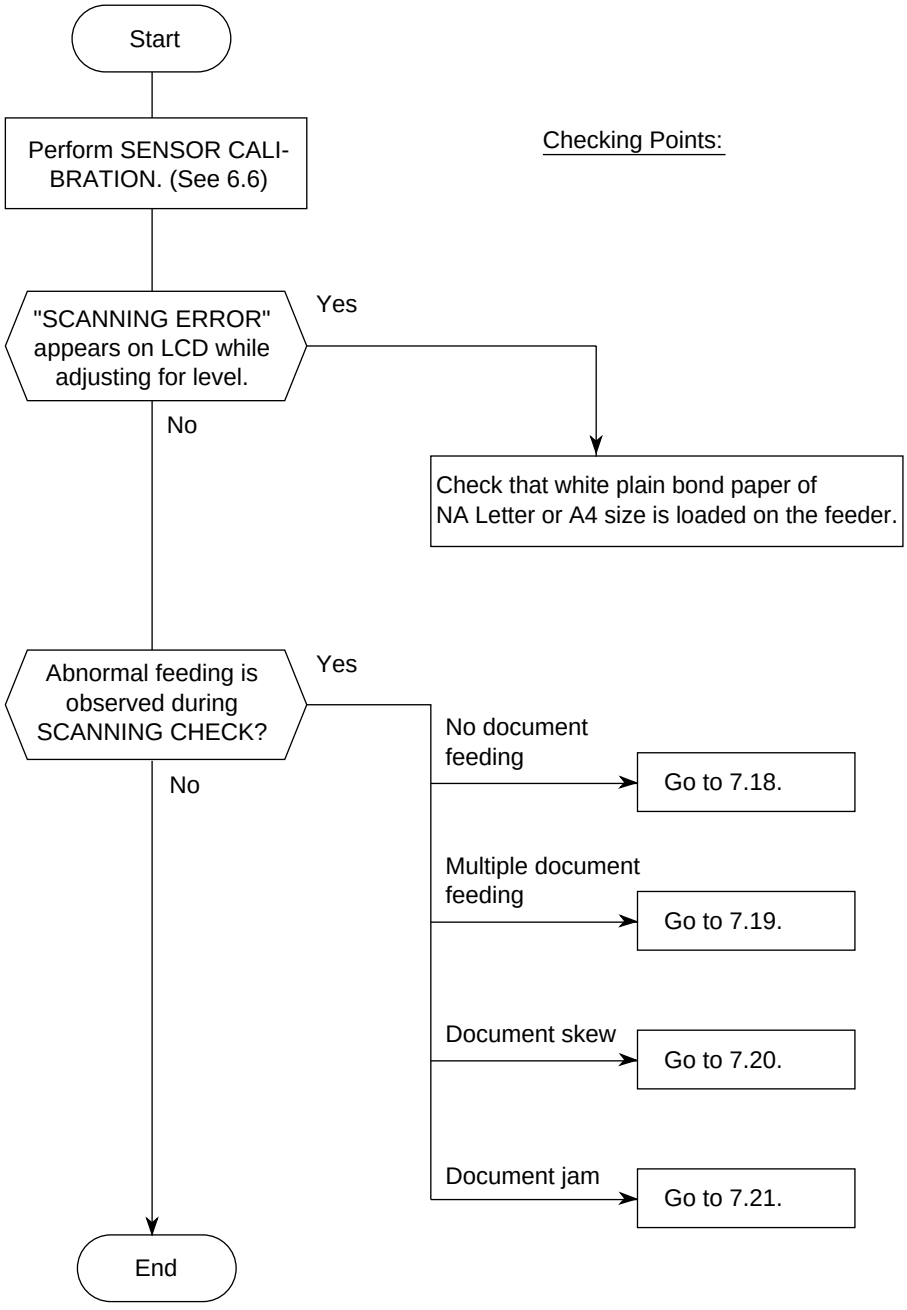
This section explains how to localize the cause of problems occurred after completion of connection with a remote station.



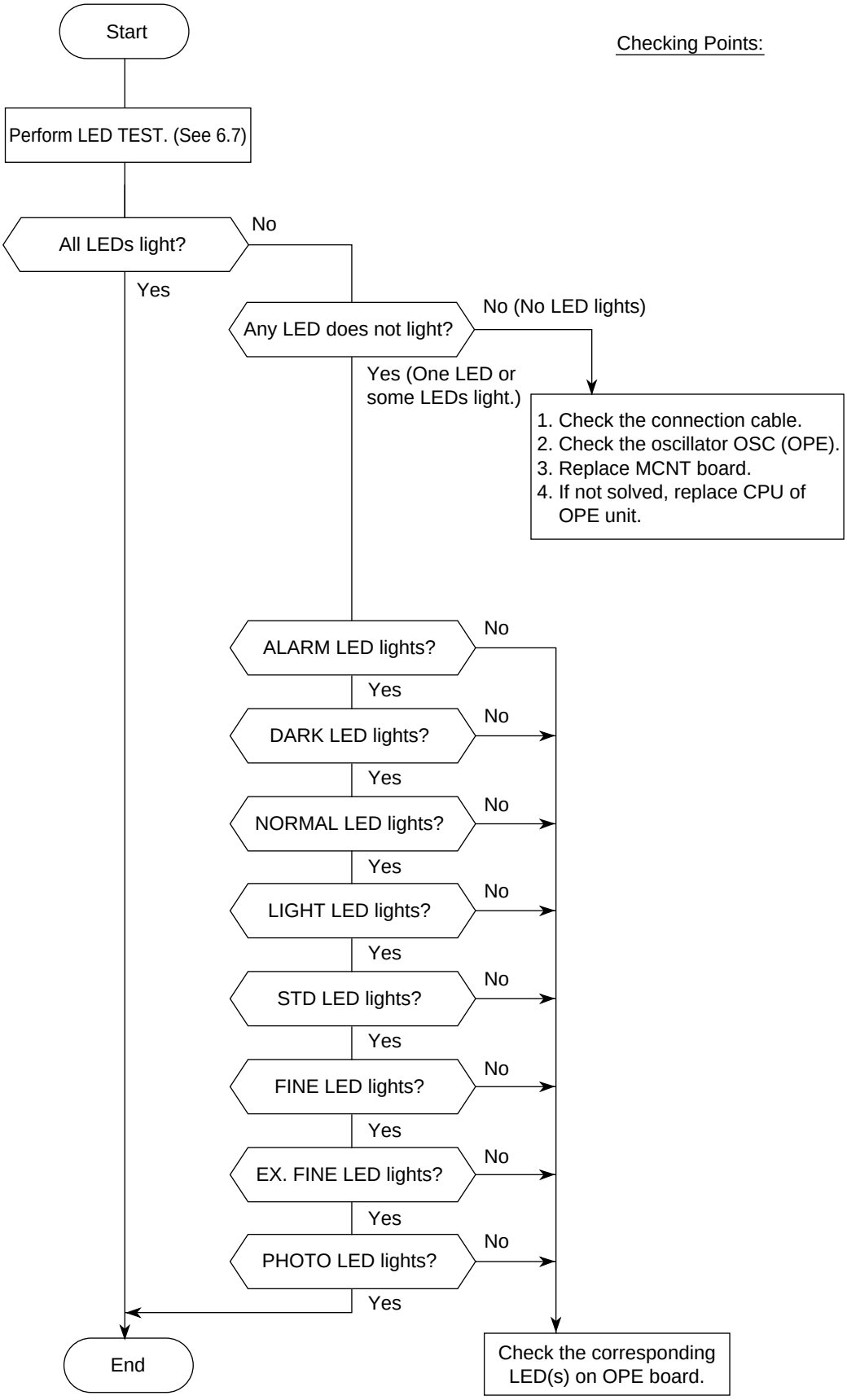

A
Test other fax machine under the same conditions, especially concerning step 1-4.
Do they receive normally?
No
Yes
Check the line and the network.
The hardware of the troubled fax machine may be damaged.
Go to 7.13 (High-speed Modem Test) to localize the cause.

**Note**: Even if the high-speed modem test results in success, 300 bps signal route remains unchecked. In that case, the most suspected unit is MCNT board.

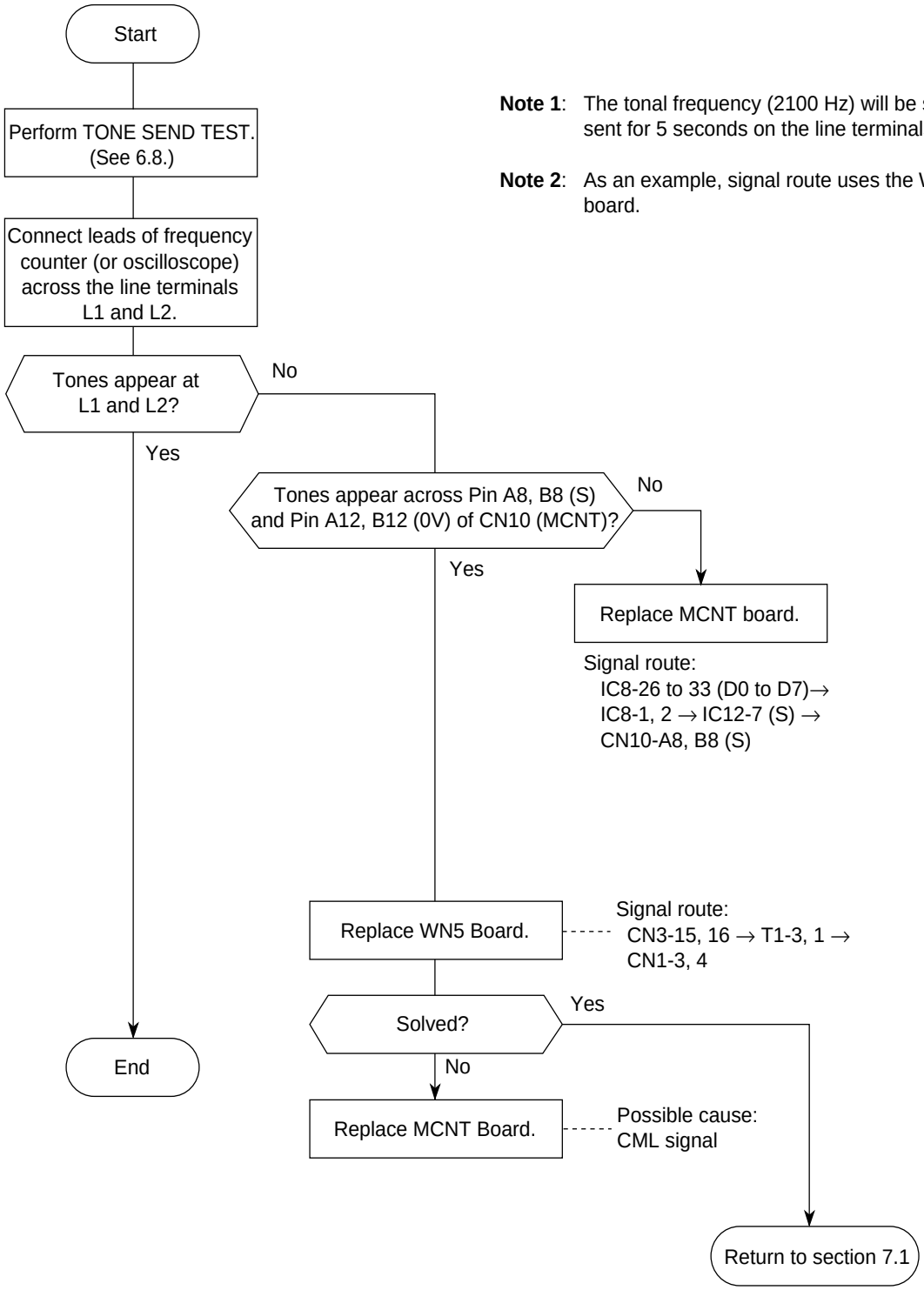
## 7.10 Sensor Calibration Test



## 7.11 LED Test


Start
Perform LED TEST. (See 6.7)
All LEDs light?
No
Yes
Any LED does not light?
No (No LED lights)
Yes (One LED or some LEDs light.)
1. Check the connection cable.
2. Check the oscillator OSC (OPE).
3. Replace MCNT board.
4. If not solved, replace CPU of OPE unit.
ALARM LED lights?
DARK LED lights?
NORMAL LED lights?
LIGHT LED lights?
STD LED lights?
FINE LED lights?
EX. FINE LED lights?
PHOTO LED lights?
Yes
No
End
Check the corresponding LED(s) on OPE board.
Checking Points:

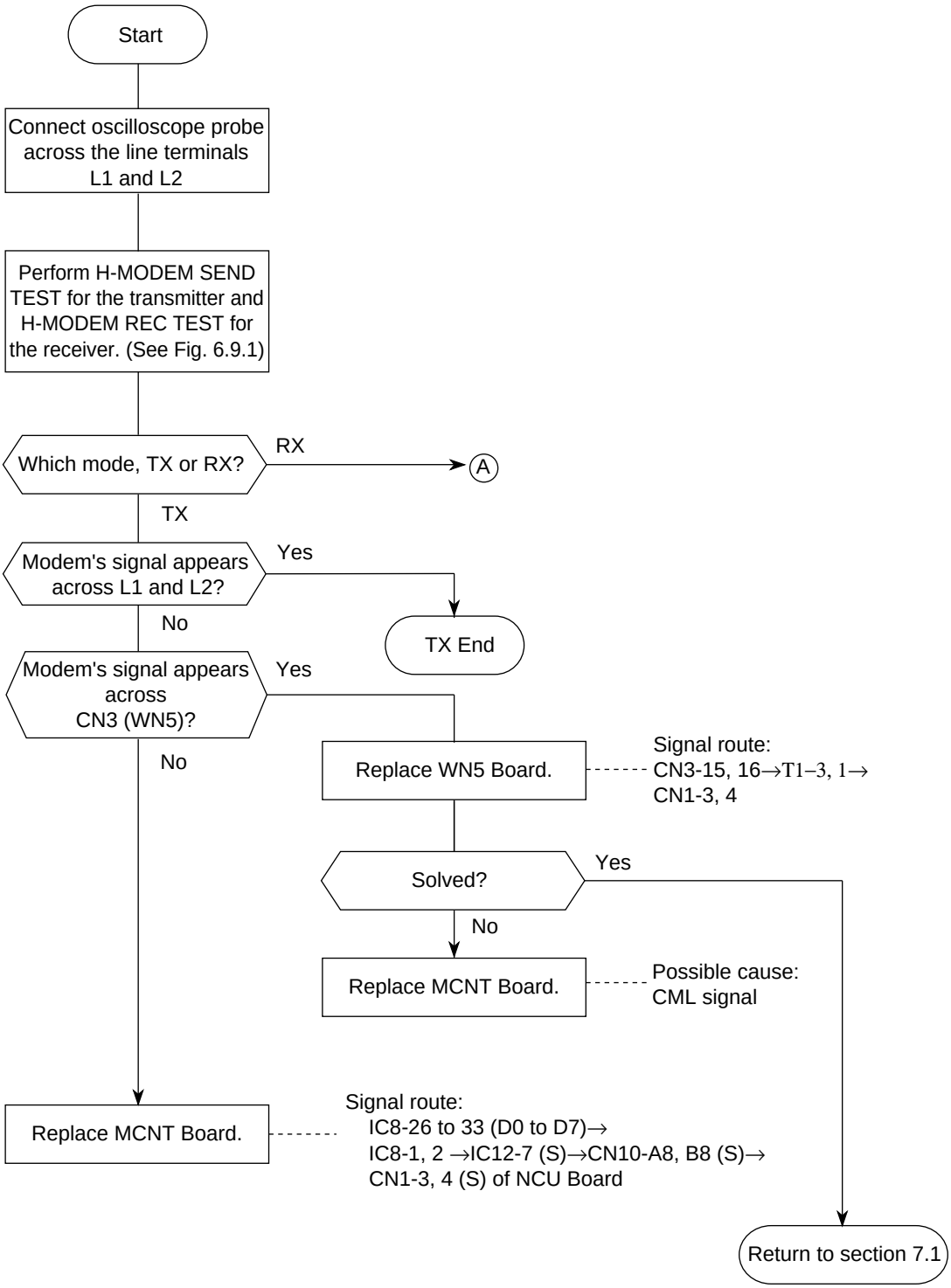
## 7.12 Tone Send Test

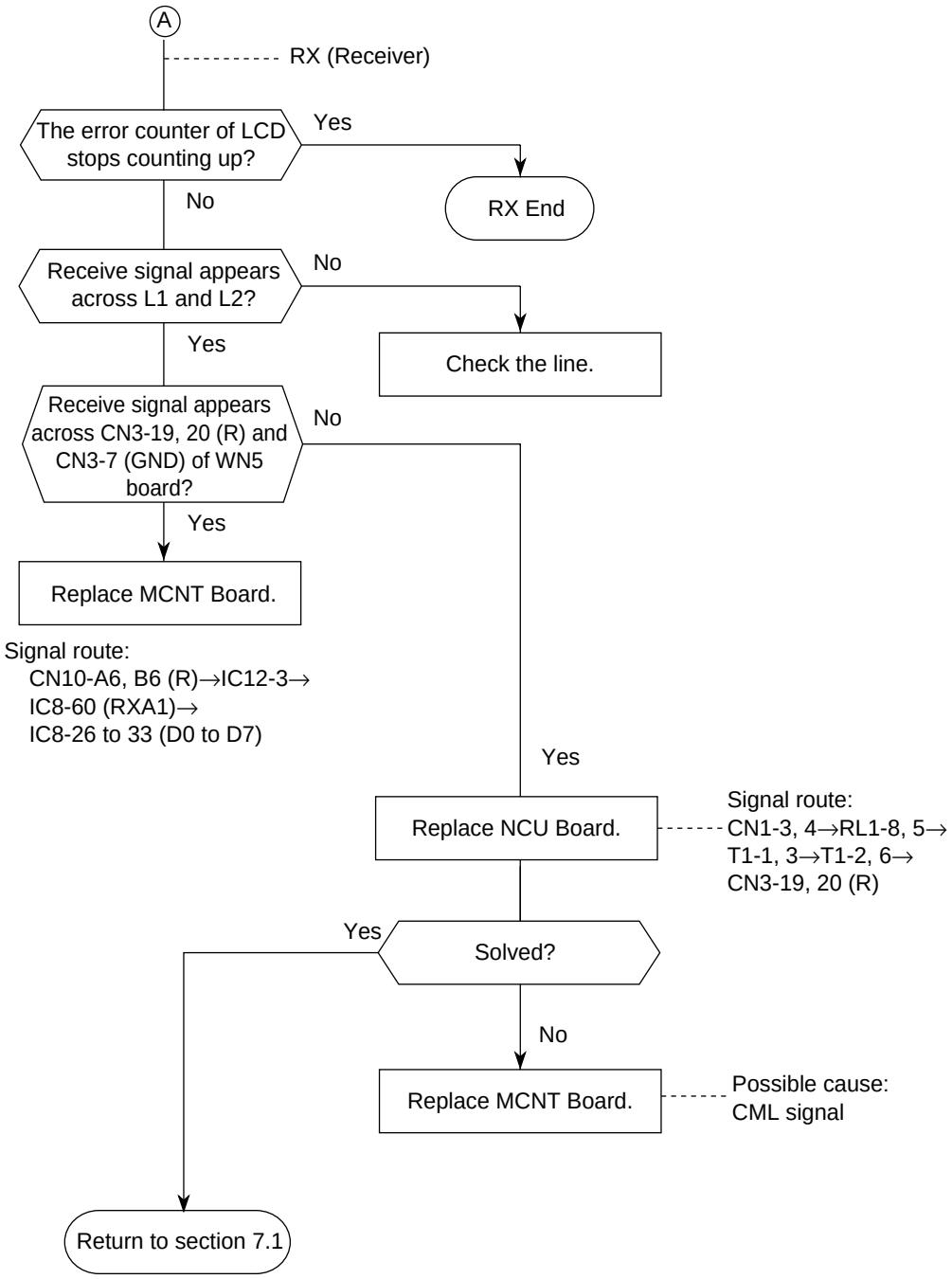



**Note 1**: The tonal frequency (2100 Hz) will be sequentially sent for 5 seconds on the line terminals L1 and L2.

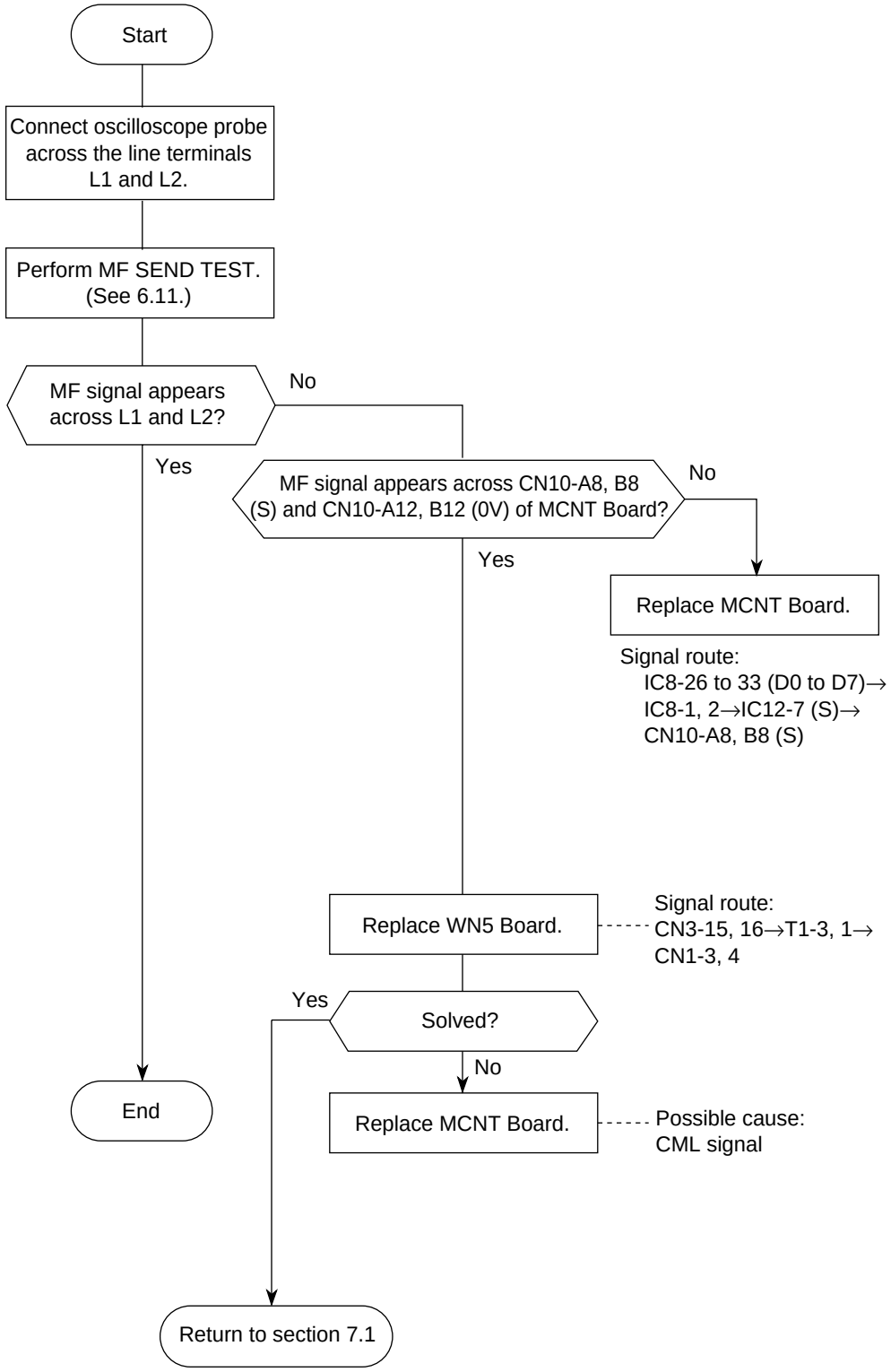
**Note 2**: As an example, signal route uses the WN5 (NCU) board.

## 7.13 High-speed Modem Test

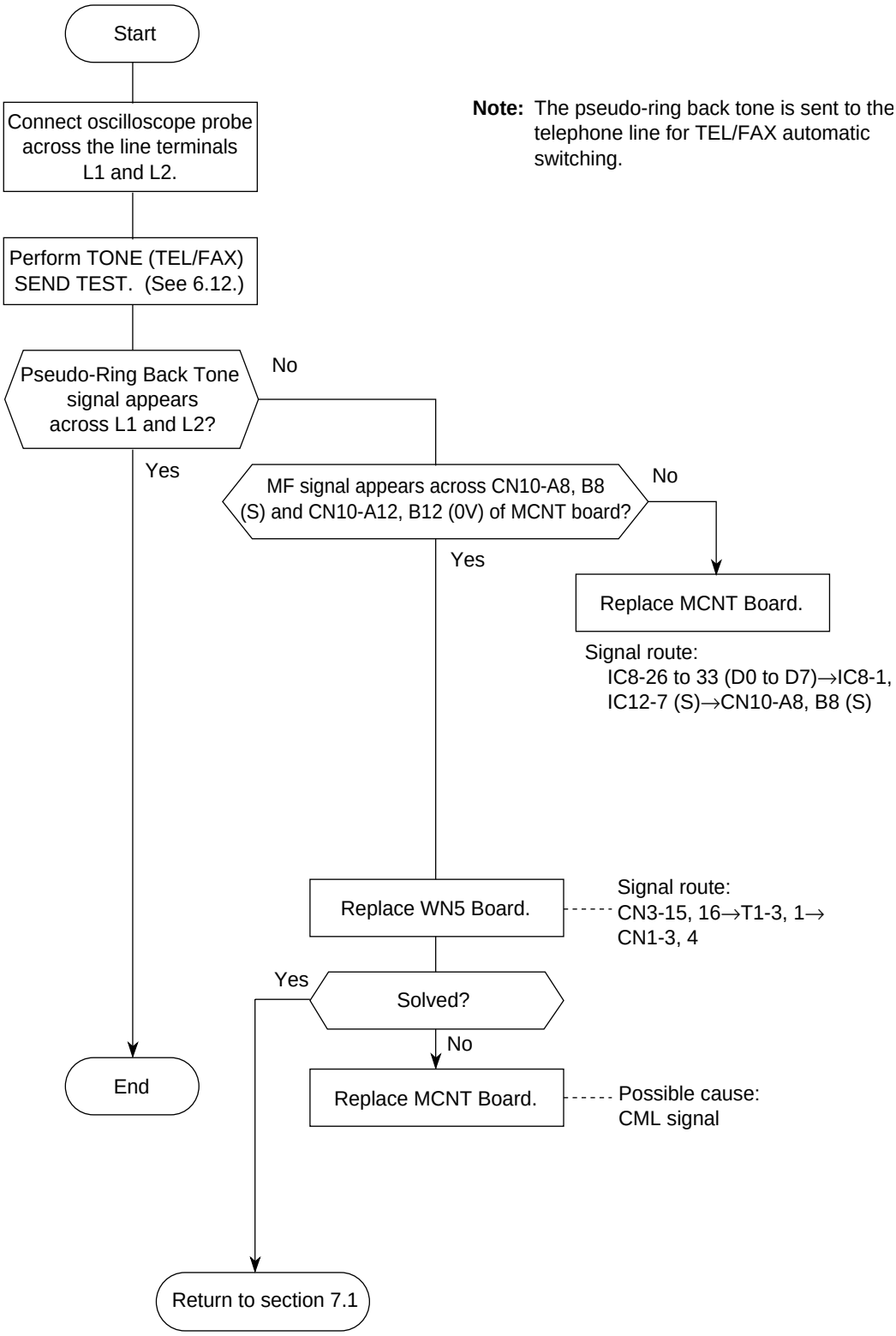



A
RX (Receiver)
The error counter of LCD stops counting up?
Yes
RX End
No
Receive signal appears across L1 and L2?
No
Check the line.
Yes
Receive signal appears across CN3-19, 20 (R) and CN3-7 (GND) of WN5 board?
No
Yes
Replace MCNT Board.
Signal route:
CN10-A6, B6 (R)→IC12-3→
IC8-60 (RXA1)→
IC8-26 to 33 (D0 to D7)
Yes
Replace NCU Board.
Signal route:
CN1-3, 4→RL1-8, 5→
T1-1, 3→T1-2, 6→
CN3-19, 20 (R)
Yes
Solved?
No
Replace MCNT Board.
Possible cause:
CML signal
Return to section 7.1

## 7.14 MF Send Test



## 7.15 Tone (TEL/FAX) Send Test

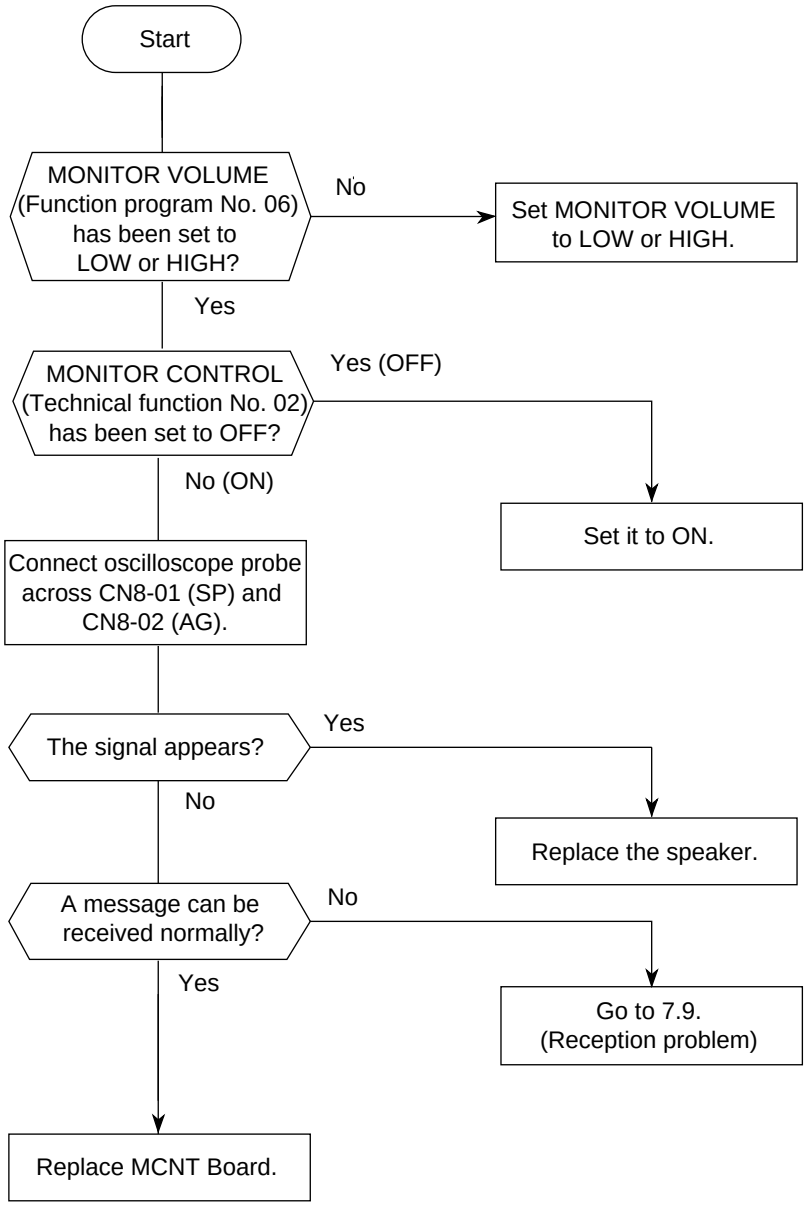



**Note:** The pseudo-ring back tone is sent to the telephone line for TEL/FAX automatic switching.

## 7.16 No Acoustic Line Monitor

There are two source routes of acoustic line monitor:

(a) General communication signal
(b) DP pulse signal




Signal route:
CN10-A6, B6→IC12-1 (RM)→
TR513-2→IC11-1→IC11-3→
IC5-5

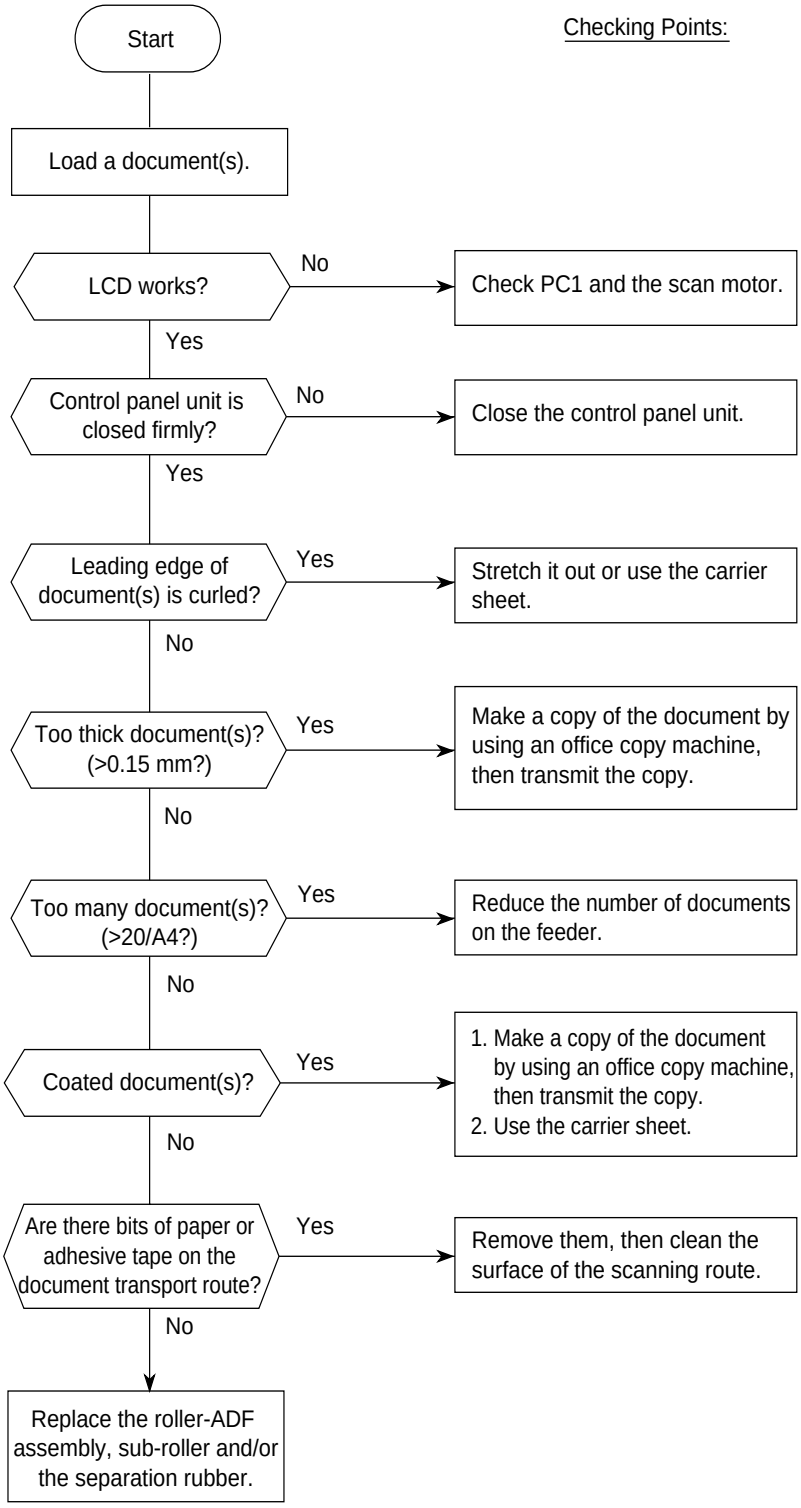
## 7.17 Power Supply Unit

(A) Low-voltage Selection
Replace the Power Supply Unit when output voltage written on the item A3 in the Appendix A is not normal.

(B) High-voltage Selection
T.B.D. (To be determined)

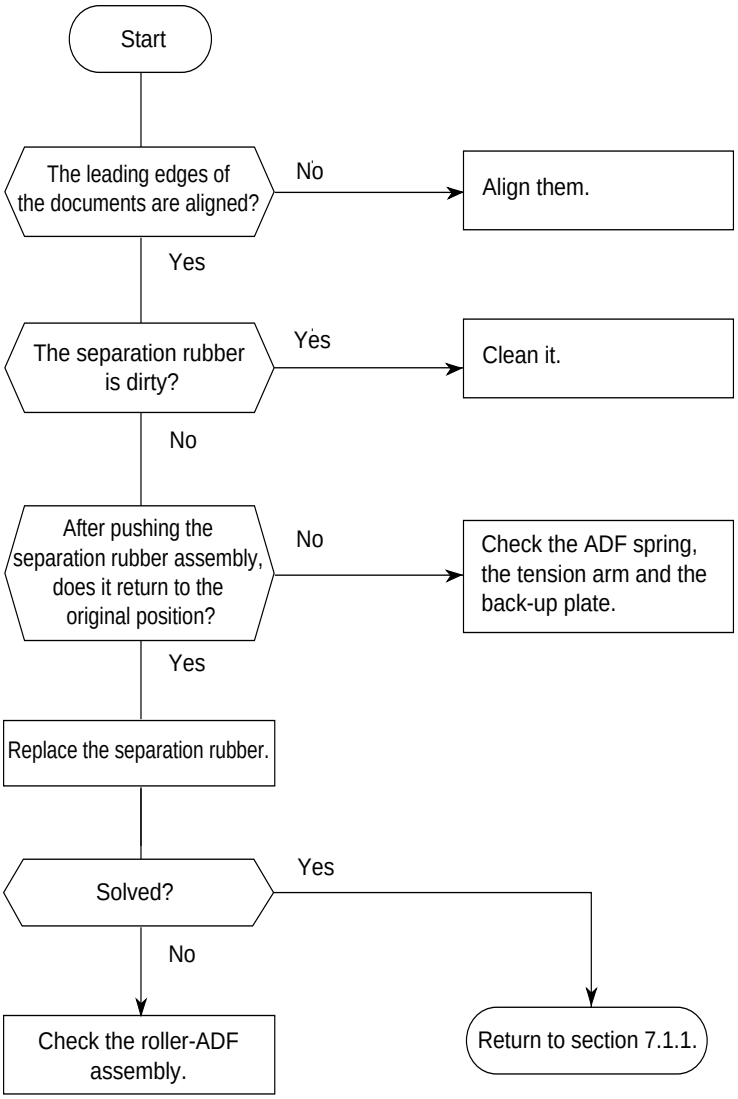
## 7.18 No Document Feeding

**Note**: This section places an emphasis on troubleshooting of mechanical portions. Therefore, it is recommended to replace the MCNT Board first and, then if not solved, follow this flow chart.

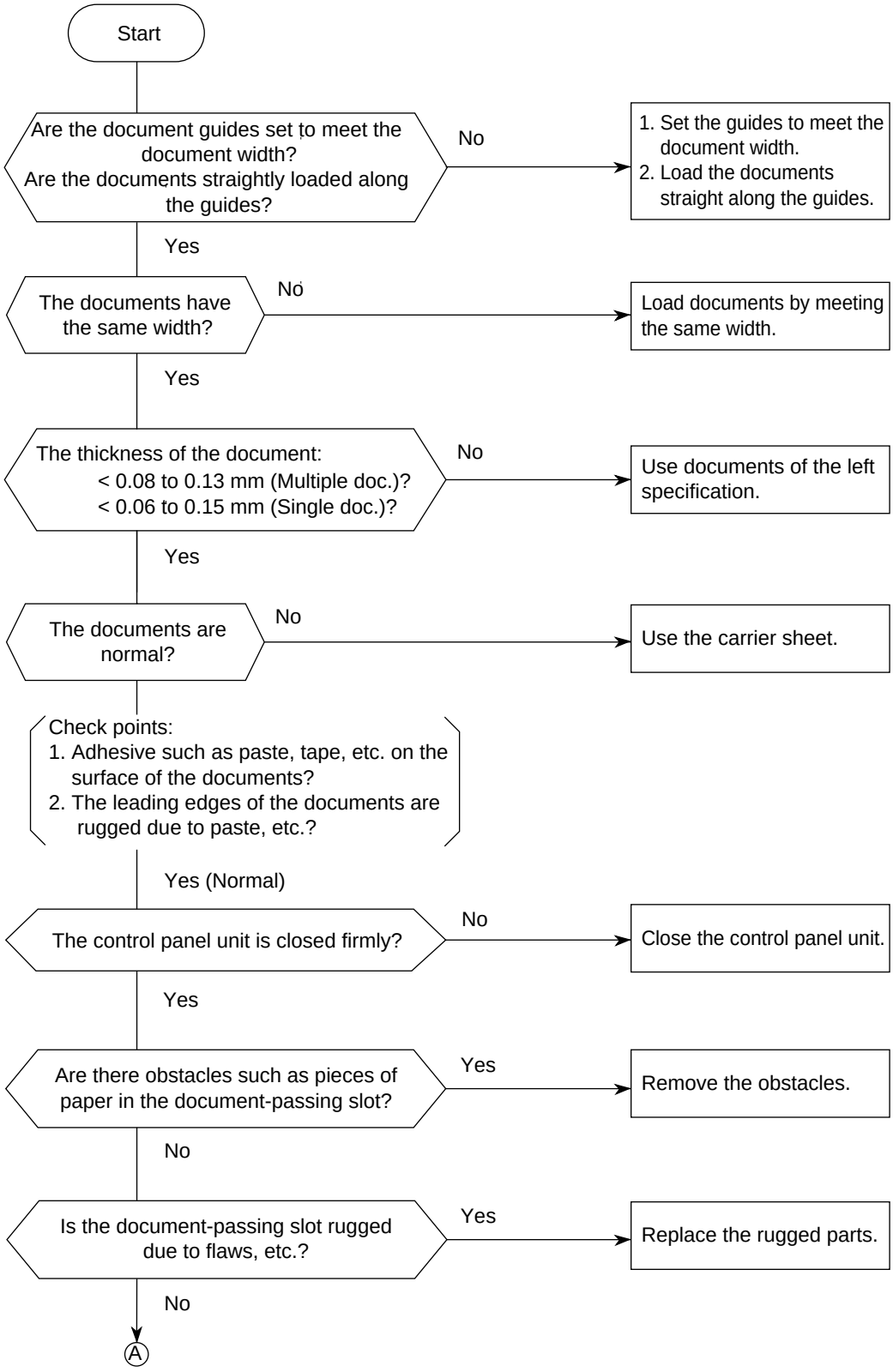

Start
Checking Points:
Load a document(s).
LCD works?
No
Check PC1 and the scan motor.
Yes
Control panel unit is closed firmly?
No
Close the control panel unit.
Yes
Leading edge of document(s) is curled?
Yes
Stretch it out or use the carrier sheet.
No
Too thick document(s)? (>0.15 mm?)
Yes
Make a copy of the document by using an office copy machine, then transmit the copy.
No
Too many document(s)? (>20/A4?)
Yes
Reduce the number of documents on the feeder.
No
Coated document(s)?
Yes
1. Make a copy of the document by using an office copy machine, then transmit the copy.
2. Use the carrier sheet.
No
Are there bits of paper or adhesive tape on the document transport route?
Yes
Remove them, then clean the surface of the scanning route.
No
Replace the roller-ADF assembly, sub-roller and/or the separation rubber.

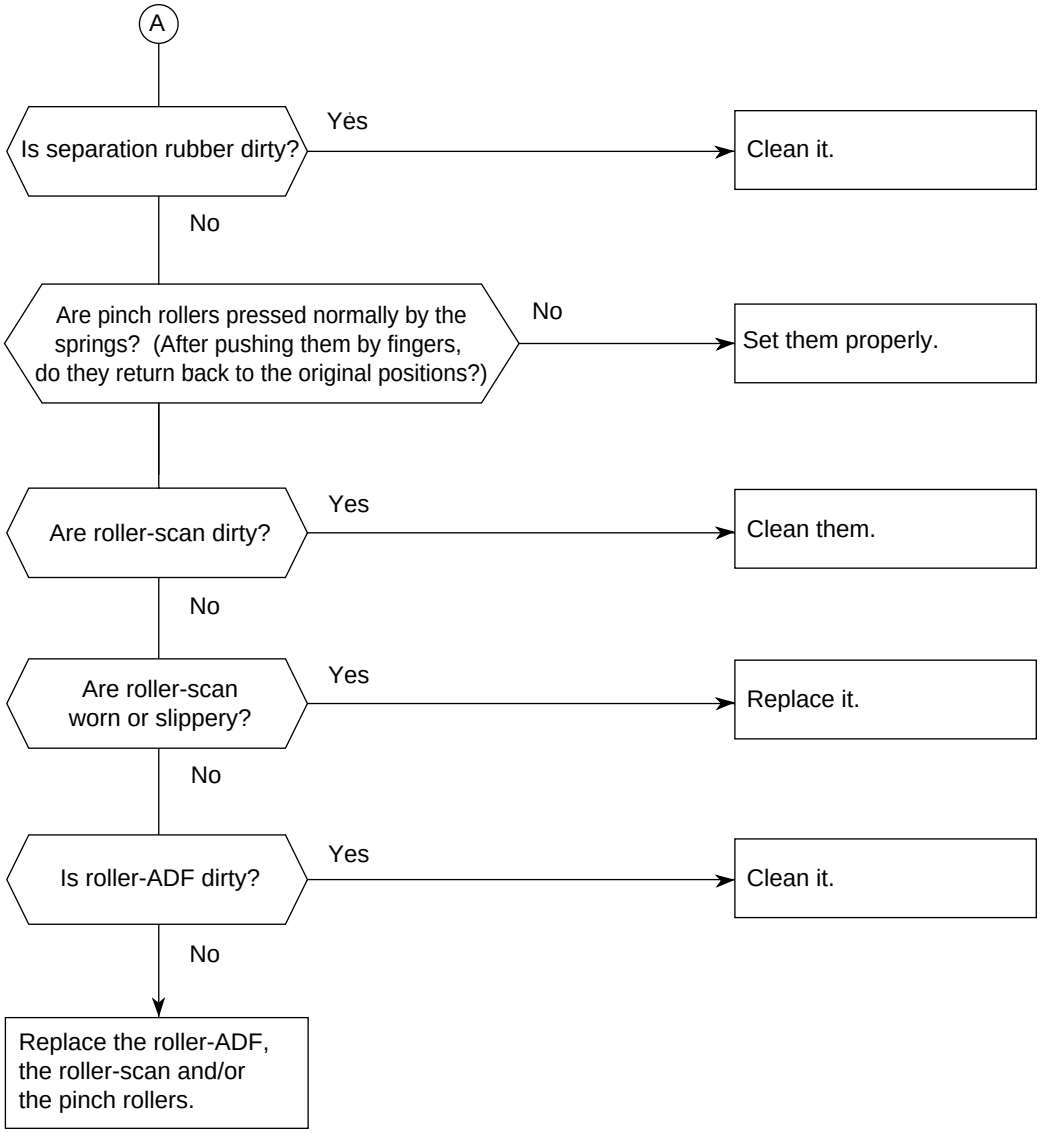
## 7.19 Multiple Document Feeding

Definition: Multiple document feeding.
Multiple documents are not separated and they are fed in the same one feeding operation.

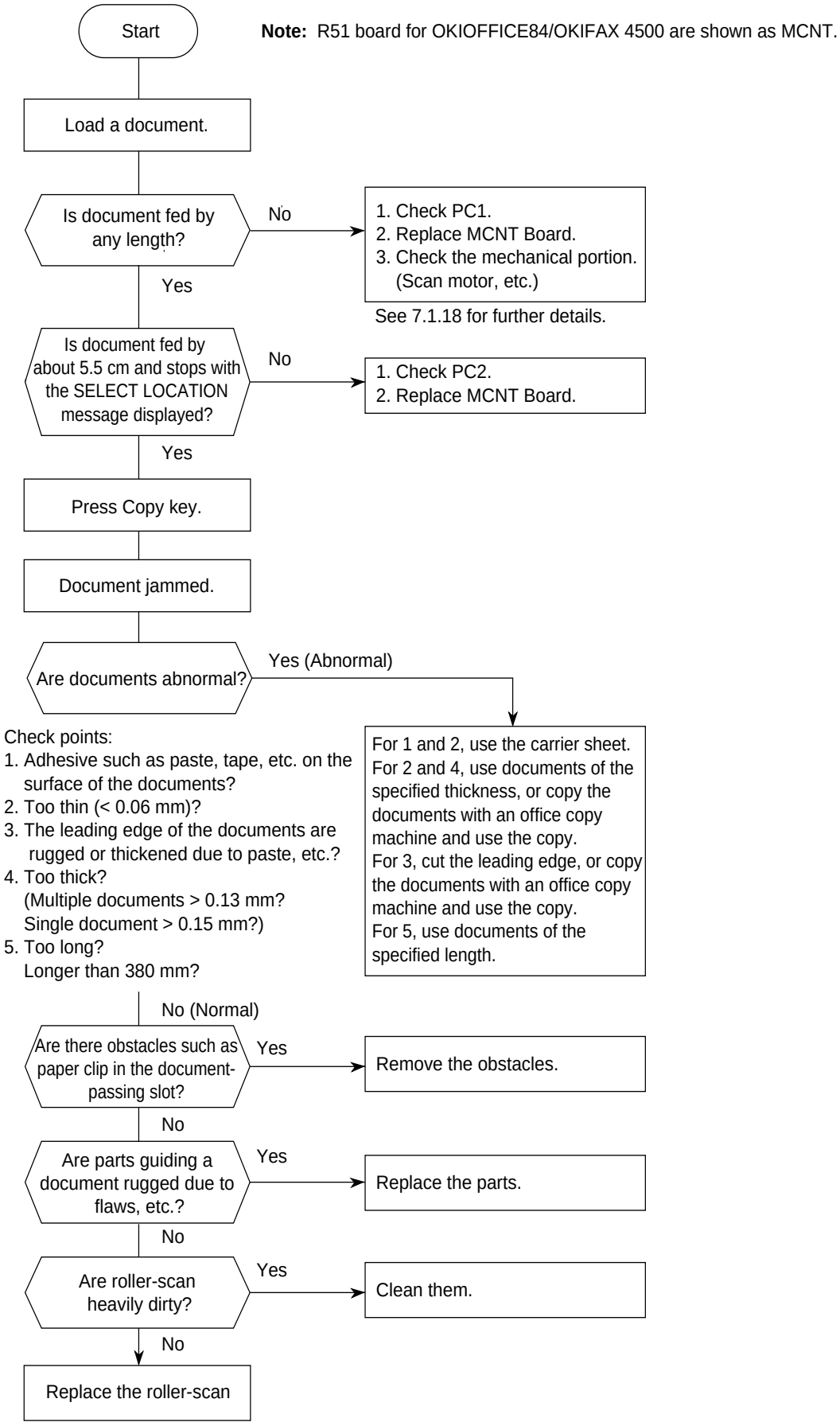


## 7.20 Document Skew


Start
Are the document guides set to meet the document width?
Are the documents straightly loaded along the guides?
No
1. Set the guides to meet the document width.
2. Load the documents straight along the guides.
Yes
The documents have the same width?
No
Load documents by meeting the same width.
Yes
The thickness of the document:
< 0.08 to 0.13 mm (Multiple doc.)?
< 0.06 to 0.15 mm (Single doc.)?
No
Use documents of the left specification.
Yes
The documents are normal?
No
Use the carrier sheet.
Check points:
1. Adhesive such as paste, tape, etc. on the surface of the documents?
2. The leading edges of the documents are rugged due to paste, etc.?
Yes (Normal)
The control panel unit is closed firmly?
No
Close the control panel unit.
Yes
Are there obstacles such as pieces of paper in the document-passing slot?
Yes
Remove the obstacles.
No
Is the document-passing slot rugged due to flaws, etc.?
Yes
Replace the rugged parts.
No
A


A
Is separation rubber dirty?
Yes
Clean it.
No
Are pinch rollers pressed normally by the springs? (After pushing them by fingers, do they return back to the original positions?)
No
Set them properly.
Are roller-scan dirty?
Yes
Clean them.
No
Are roller-scan worn or slippery?
Yes
Replace it.
No
Is roller-ADF dirty?
Yes
Clean it.
No
Replace the roller-ADF, the roller-scan and/or the pinch rollers.

## 7.21 Document Jam



## 7.22 Printer Unit

### 7.22.1 Precautions

1. Points to check before correcting image troubles
   (1) Is the printer being run in proper ambient conditions?
   (2) Have the supplies (toner) and the routine replacement part (EP unit) been replaced properly?
   (3) Is the recording paper normal?
   (4) Has the EP unit been loaded properly?

2. Tips for correcting image troubles
   (1) Do not touch, or bring foreign matter into contact with the surface of the drum.
   (2) Do not expose the drum to direct sunlight.
   (3) Keep hands off the fuser unit as it is heated during operation.
   (4) Do not expose the drum to light for longer than 5 minutes at room temperature.

## 7.22.2 Troubleshooting Flow Charts of Printer Unit

Overall troubleshooting flow chart:

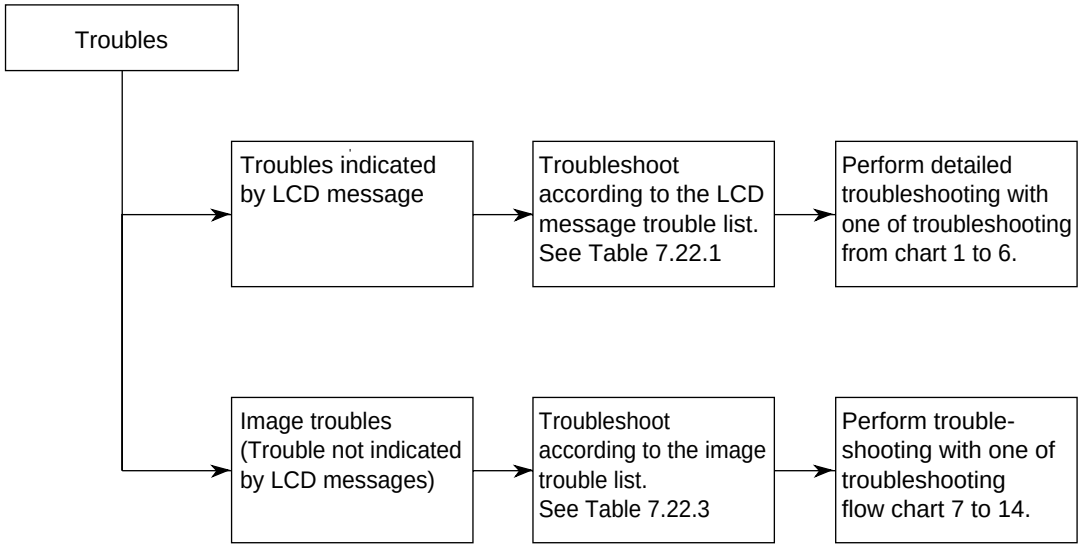
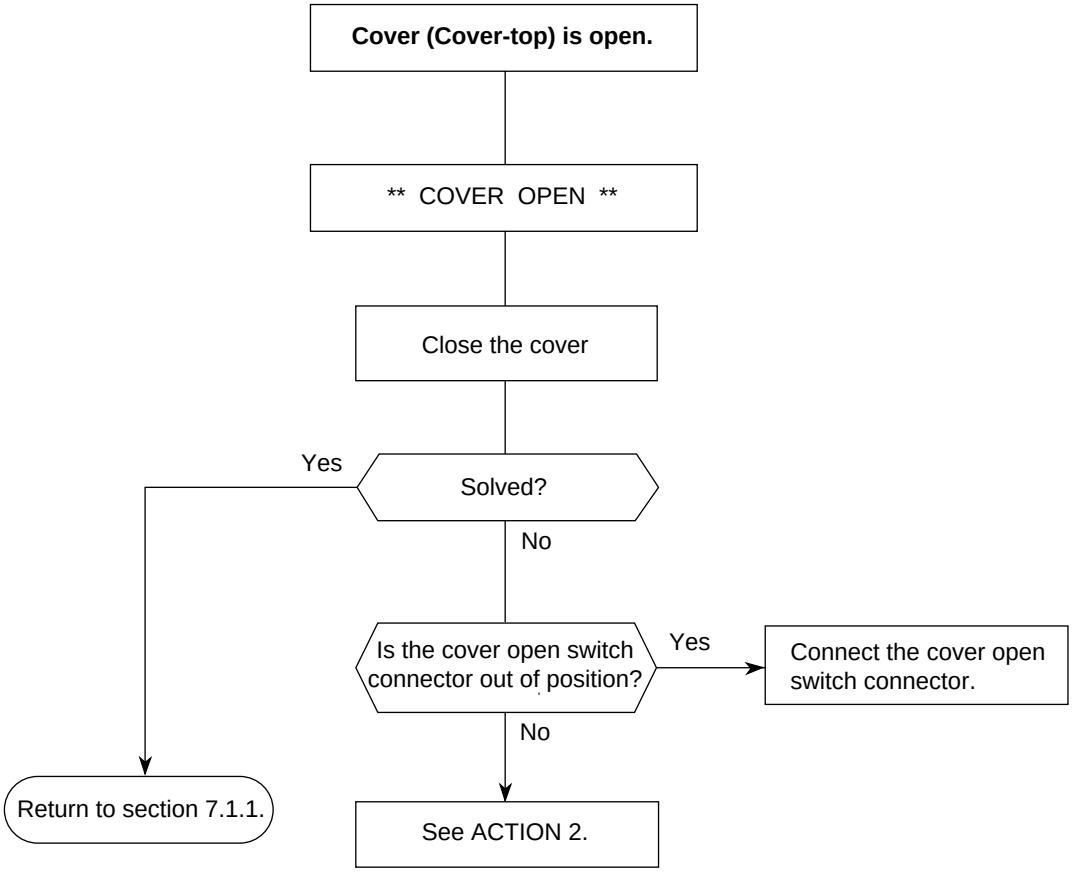

Troubles
Troubles indicated by LCD message
Troubleshoot according to the LCD message trouble list. See Table 7.22.1
Perform detailed troubleshooting with one of troubleshooting from chart 1 to 6.
Image troubles (Trouble not indicated by LCD messages)
Troubleshoot according to the image trouble list. See Table 7.22.3
Perform trouble-shooting with one of troubleshooting flow chart 7 to 14.

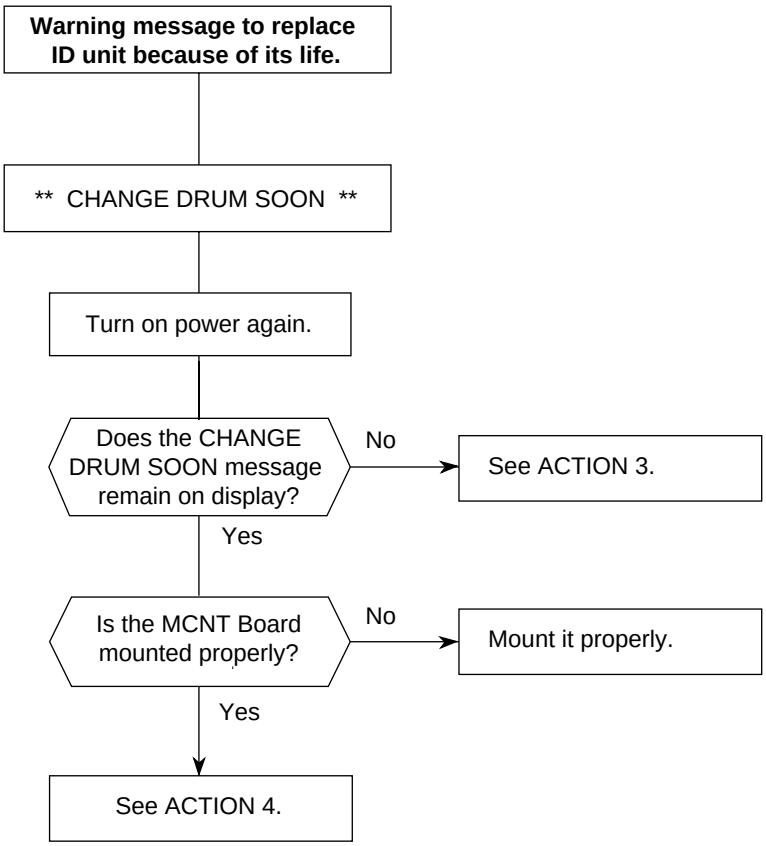
**Table 7.22.1 LCD Message Trouble List**

| Category | LCD message display | Trouble | Troubleshooting flow chart number |
|---|---|---|---|
| Cover open | 14:14 [FAX]<br>COVER OPEN | The cover (cover-top) is open. | 1 |
| Image drum alarm | 14:14 [FAX]<br>CHANGE DRUM SOON | Warning message to replace EP unit because of its life. | 2 |
| Engine errors | PRINTER ALARM 2[TEL]<br>PLEASE CONFIRM | Engine controller error | 3 |
| | PRINTER ALARM 4[TEL]<br>PLEASE CONFIRM | Fuser unit thermal error | 4 |
| Recording paper/ jam error | PAPER OUT/JAM [FAX]<br>REPLACE PAPER | Recording paper feed jam, transport jam, ejection jam, recording size error | 5 |
| Paper cassette request | PAPER OUT/JAM [FAX]<br>REPLACE PAPER | No recording paper tray or no recording paper | 6 |
| Daily status | TONER LOW [FAX]<br>REPLACE TONER CART. | Toner is running short.<br>Note: No toner memory RX is ON. | |
| | 14:14 [FAX]<br>REPLACE TONER CART. | Toner is running short.<br>Note: No toner memory RX is OFF. | |

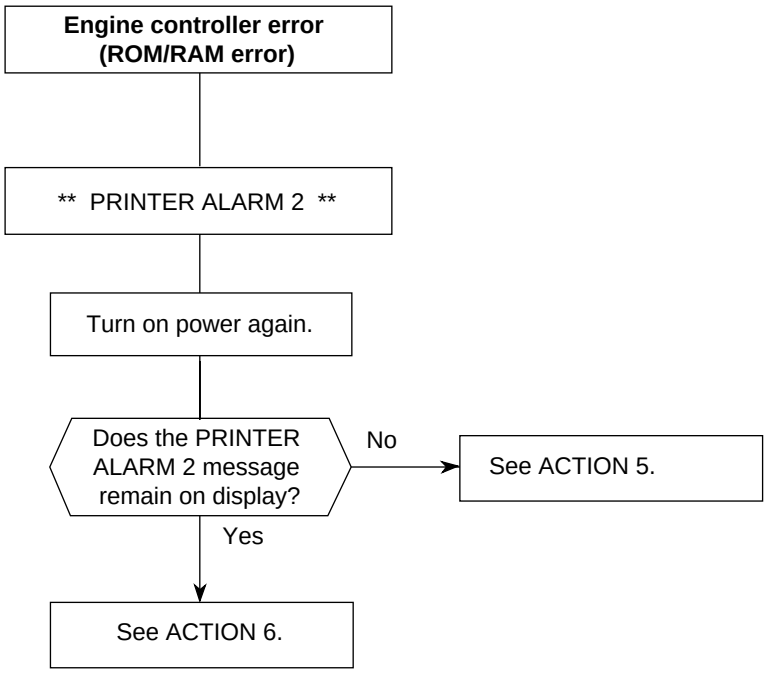
**Troubleshooting flow chart 1:**



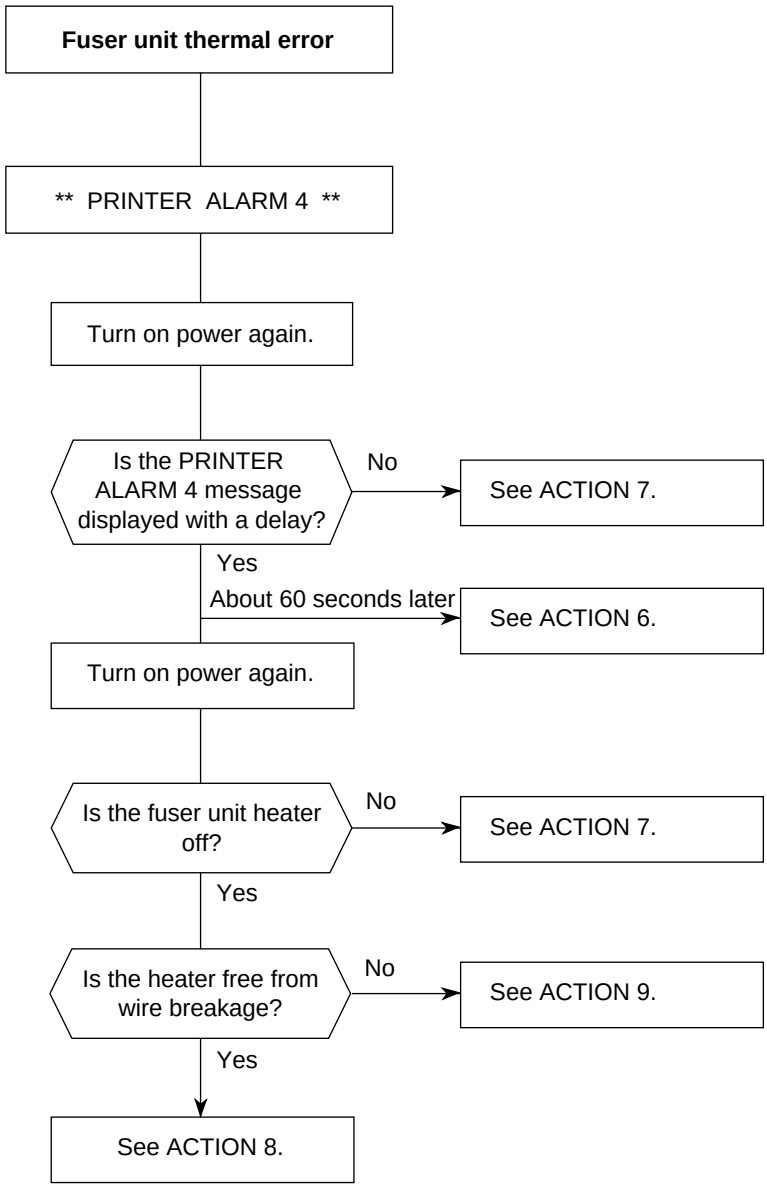
**Troubleshooting flow chart 2:**



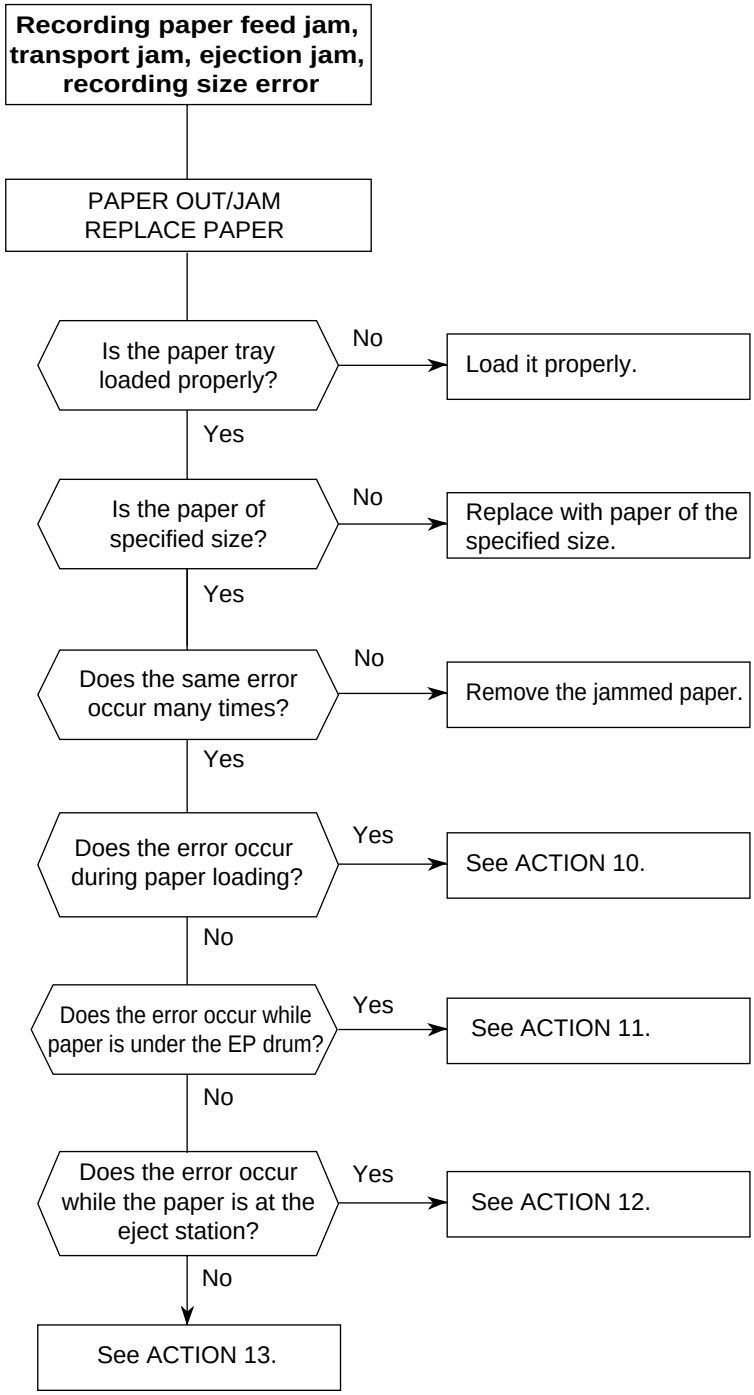
**Troubleshooting flow chart 3:**



**Troubleshooting flow chart 4:**



**Troubleshooting flow chart 5:**



**Troubleshooting flow chart 6:**

No recording paper tray or not recording paper

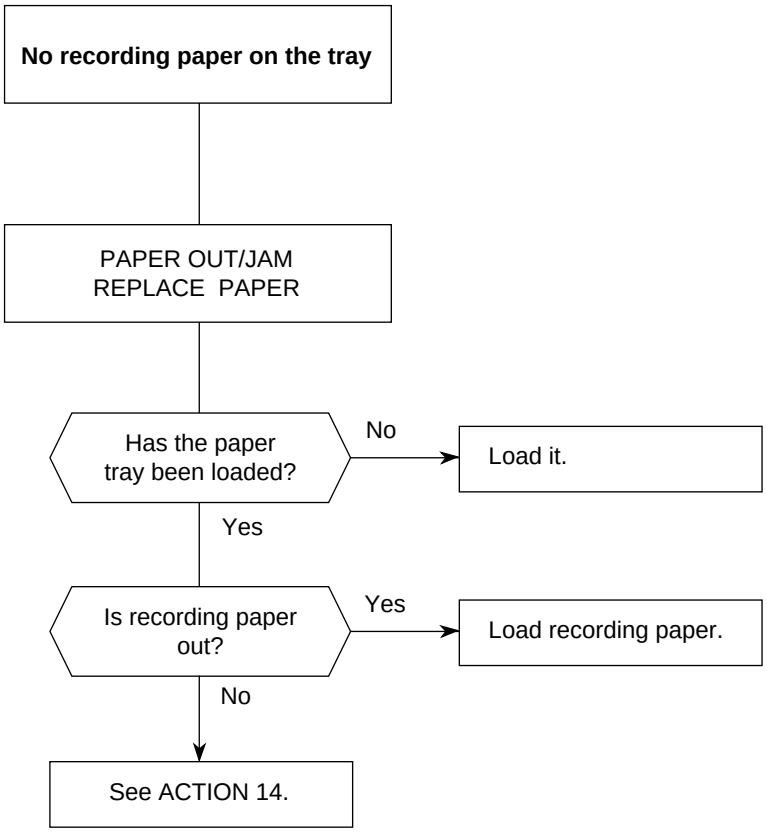


**Table 7.22.2 Action Items (Printer Unit-LCD Message)**

| No. | ACTION |
|---|---|
| 1 | Check MCNT Board. |
| 2 | Check P2H/P6L Board<br>cover open switch,<br>cover open switch connection.<br>Check MCNT Board. |
| 3 | Return to Section 7.1. |
| 4 | Replace the EP Unit. And clear Drum Count, Section 6.3. |
| 5 | Check installation of MCNT board, POWER SUPPLY UNIT board. |
| 6 | Check MCNT Board. |
| 7 | Check thermister (resistance of about 200 kilo ohms at room temperature and about 140 kilo ohms at high temperature), POWER SUPPLY UNIT. |
| 8 | Check connection between the PWU and the fuser assembly, heater, thermostat. |
| 9 | Check PWU. |
| 10 | Check Sensor-E, magnet-H, hopping roller, pulse motor, MCNT Board, Action of Idle gear-P. |
| 11 | Check Gear-T, MCNT Board, P2H/P6L Board. |
| 12 | Check exit sensor lever, PWU |
| 13 | Check MCNT Board. |
| 14 | Check PWU, MCNT board. |

***Note***: R51 board for OKIOFFICE84/OKIFAX 4500 is shown as MCNT.

## Table 7.22.3 Image Troubles

| Abnormal Symptom | Reference Figure | Troubleshooting Flow Chart No. |
|---|---|---|
| Images are light or blurred as a whole. | Fig. Ⓐ | 7 |
| The blank background is smeared. | Fig. Ⓑ | 8 |
| Blank paper is output. | Fig. Ⓒ | 9 |
| Black belts or black stripes in vertical direction. | Fig. Ⓓ | 10 |
| Periodic abnormal printing. | Fig. Ⓔ | 11 |
| Some parts not printed. | —— | 12 |
| White belts or some white stripes in vertical direction | Fig. Ⓕ | 13 |
| Poor fusing (Images are blurred or peeled off when touched by hands) | —— | 14 |

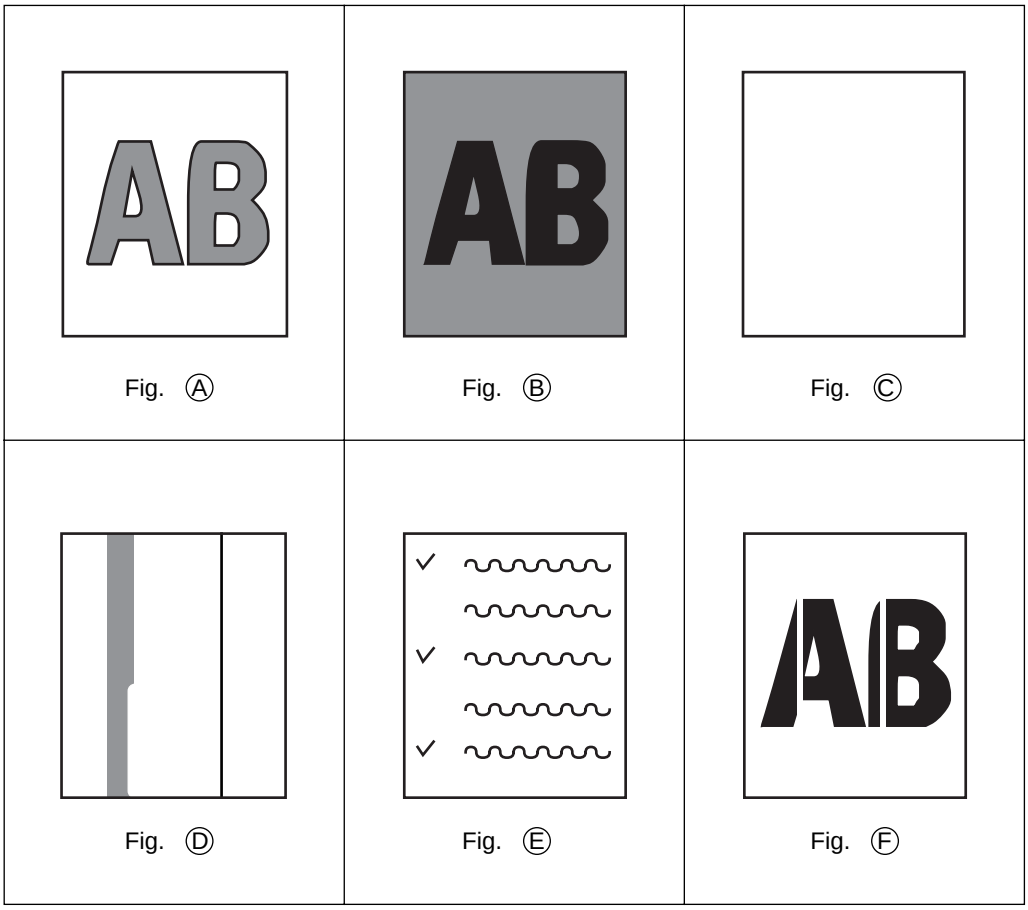
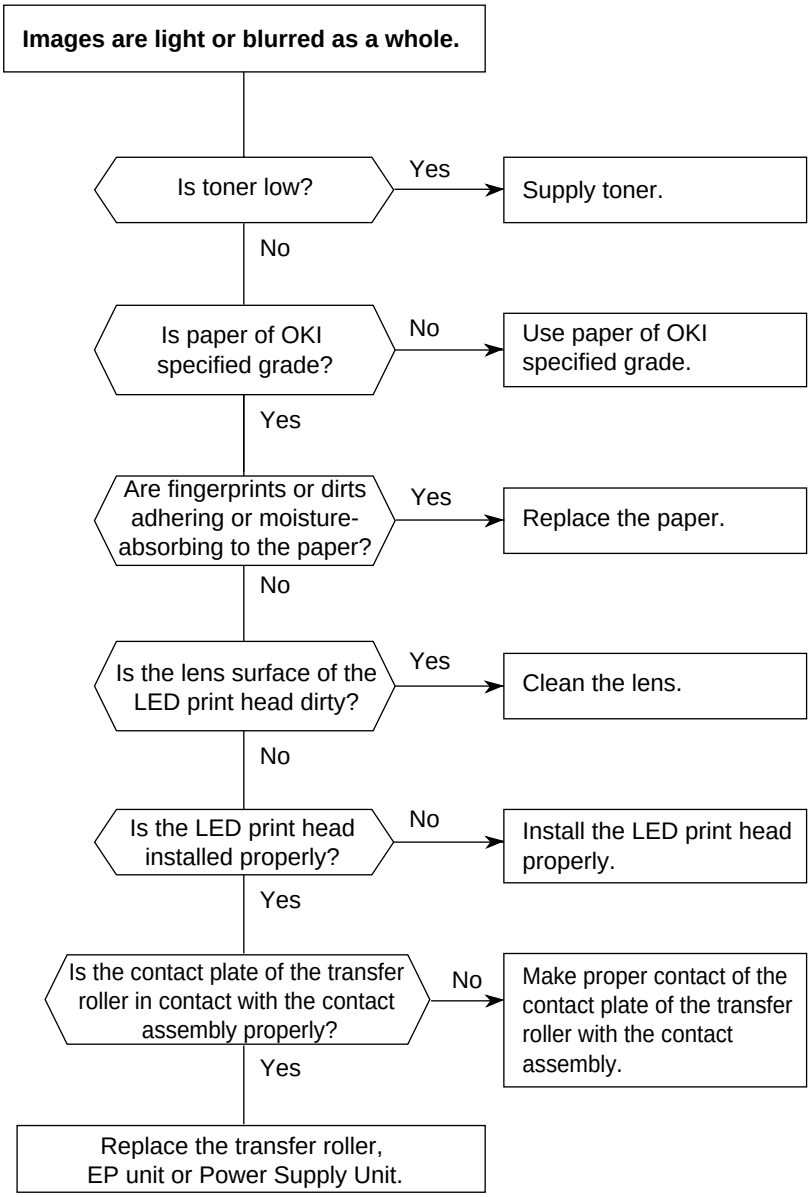
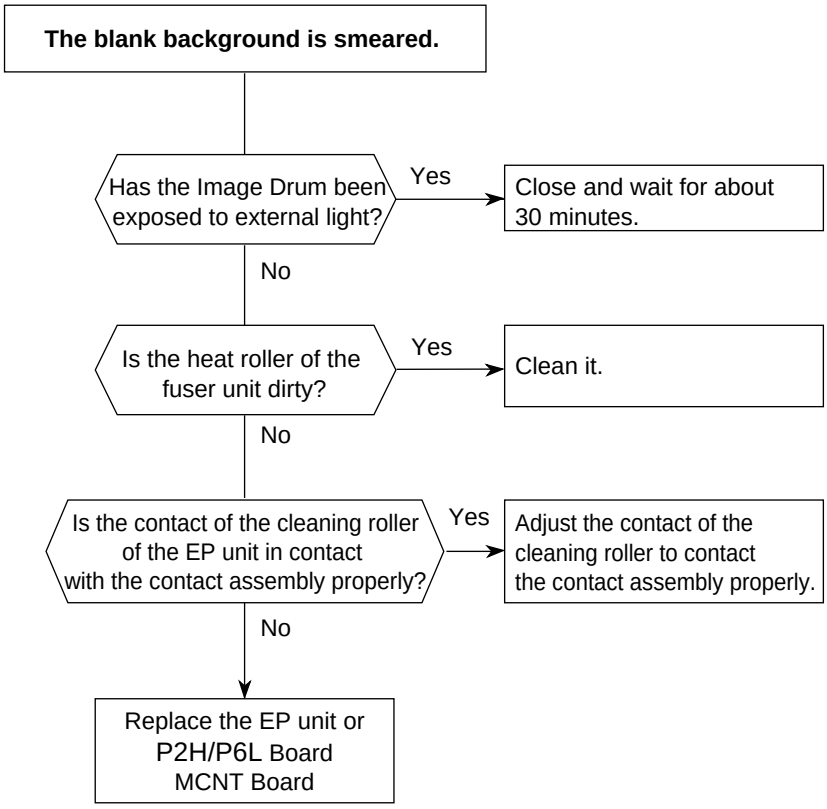



**Figure 7.22.1 Abnormal Symptoms of Image Troubles (Example)**

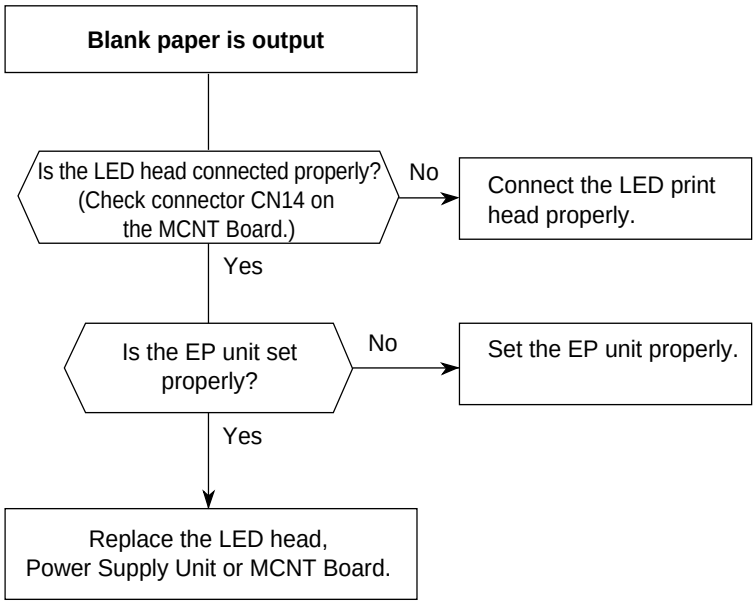
**Troubleshooting flow chart 7:**


Images are light or blurred as a whole.
Is toner low?
Yes
Supply toner.
No
Is paper of OKI specified grade?
No
Use paper of OKI specified grade.
Yes
Are fingerprints or dirts adhering or moisture-absorbing to the paper?
Yes
Replace the paper.
No
Is the lens surface of the LED print head dirty?
Yes
Clean the lens.
No
Is the LED print head installed properly?
No
Install the LED print head properly.
Yes
Is the contact plate of the transfer roller in contact with the contact assembly properly?
No
Make proper contact of the contact plate of the transfer roller with the contact assembly.
Yes
Replace the transfer roller, EP unit or Power Supply Unit.

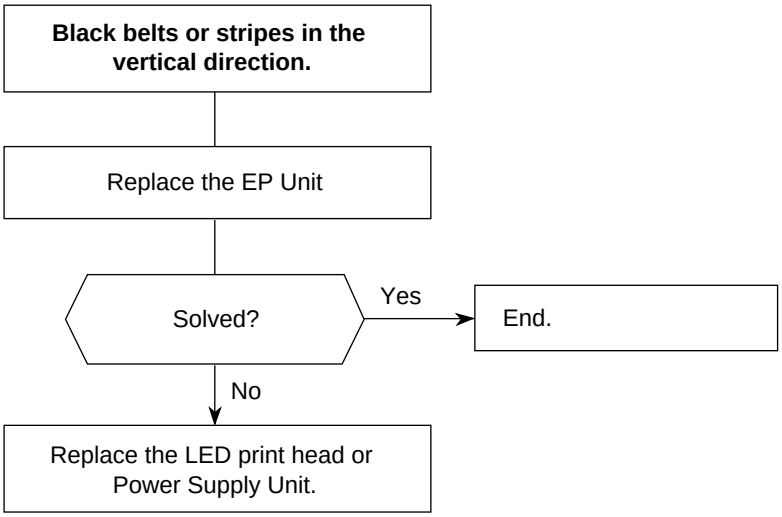
**Troubleshooting flow chart 8:**


The blank background is smeared.
Has the Image Drum been exposed to external light?
Yes
Close and wait for about 30 minutes.
No
Is the heat roller of the fuser unit dirty?
Yes
Clean it.
No
Is the contact of the cleaning roller of the EP unit in contact with the contact assembly properly?
Yes
Adjust the contact of the cleaning roller to contact the contact assembly properly.
No
Replace the EP unit or
P2H/P6L Board
MCNT Board

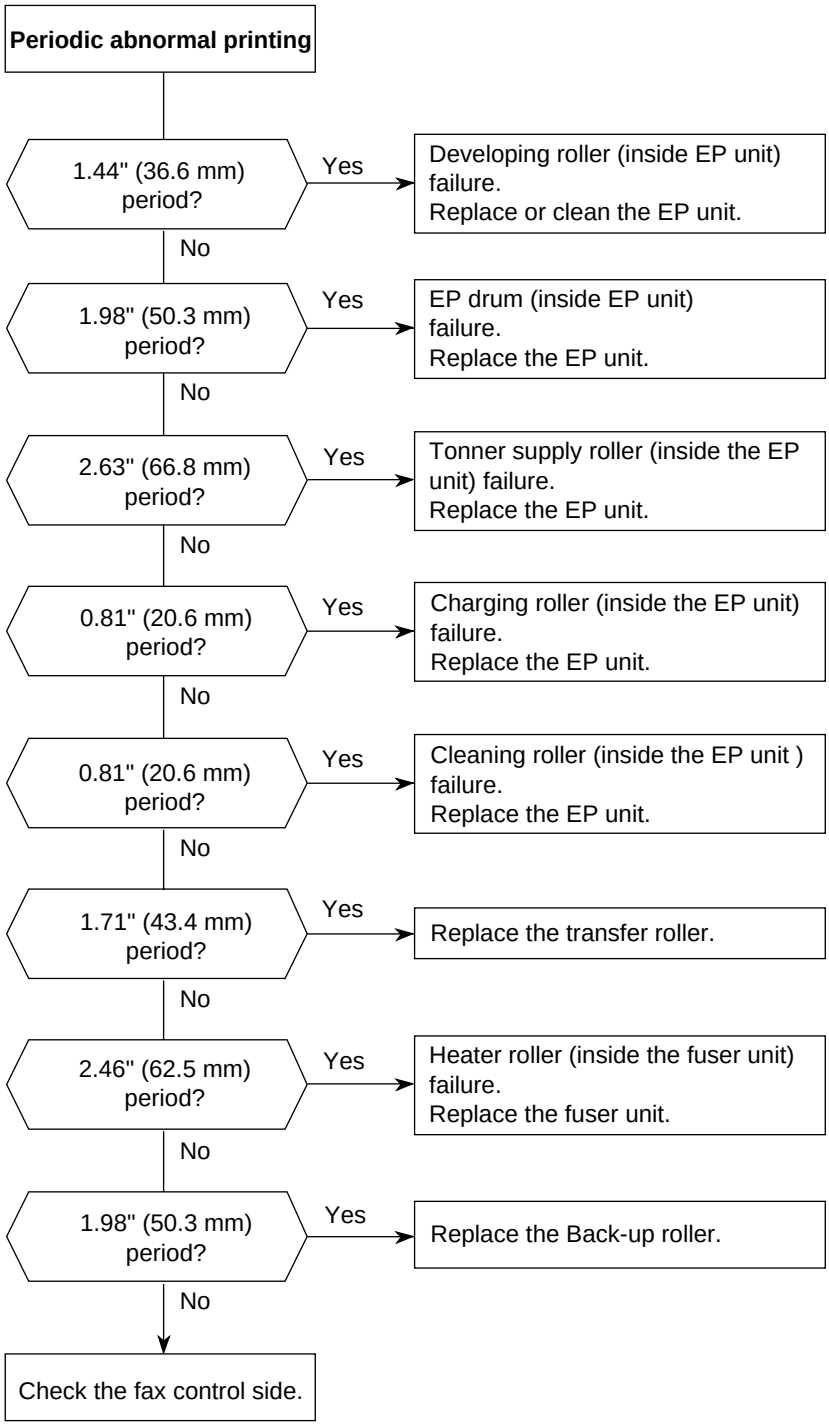
**Troubleshooting flow chart 9:**


Blank paper is output
Is the LED head connected properly? (Check connector CN14 on the MCNT Board.)
No
Connect the LED print head properly.
Yes
Is the EP unit set properly?
No
Set the EP unit properly.
Yes
Replace the LED head,
Power Supply Unit or MCNT Board.

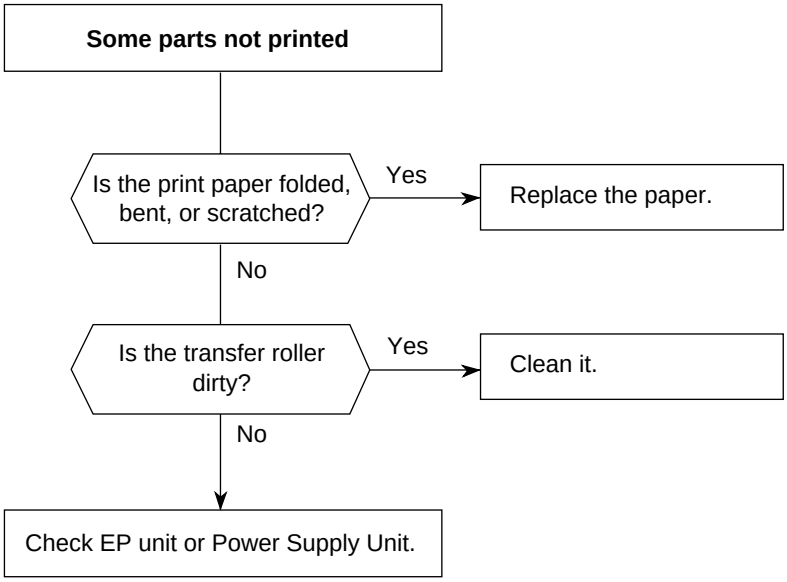
**Troubleshooting flow chart 10:**



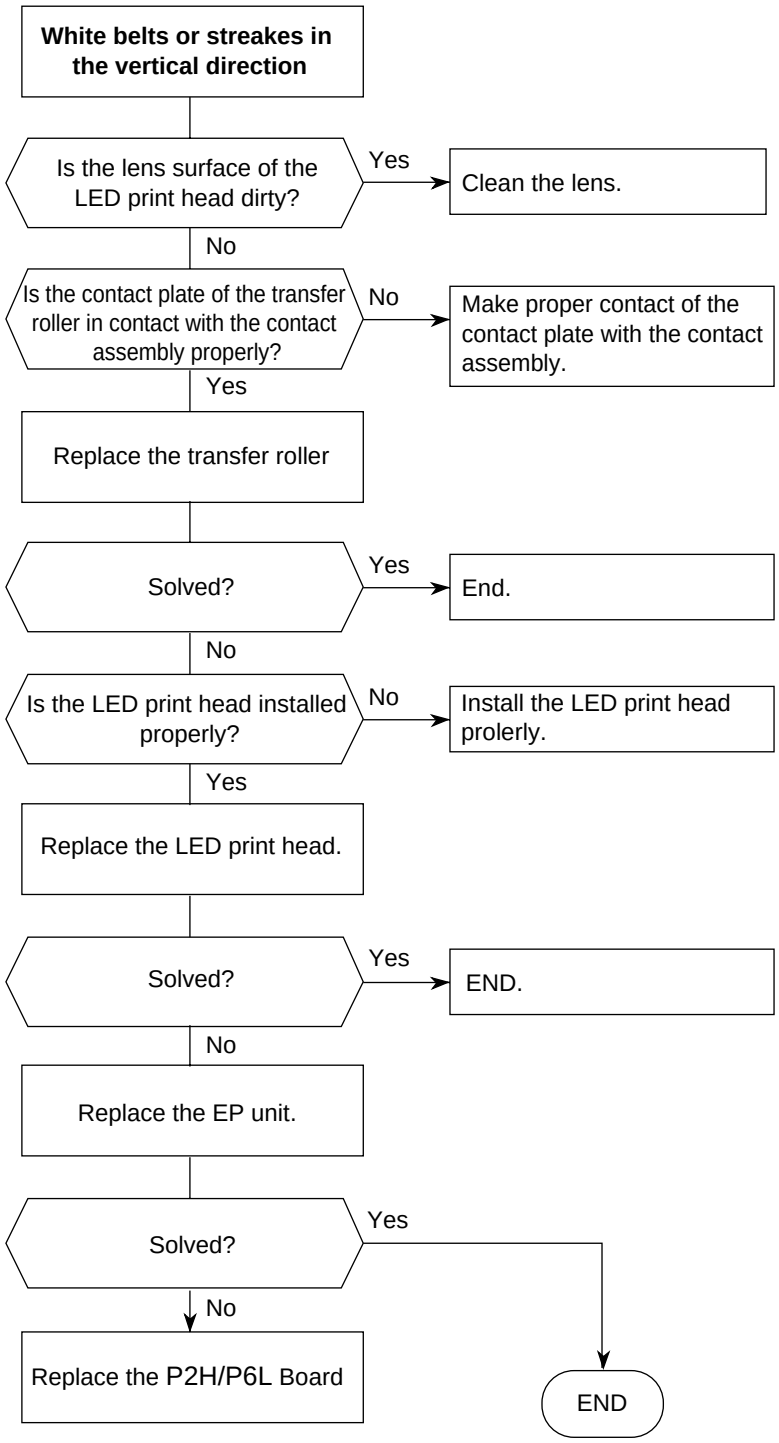
**Troubleshooting flow chart 11:**



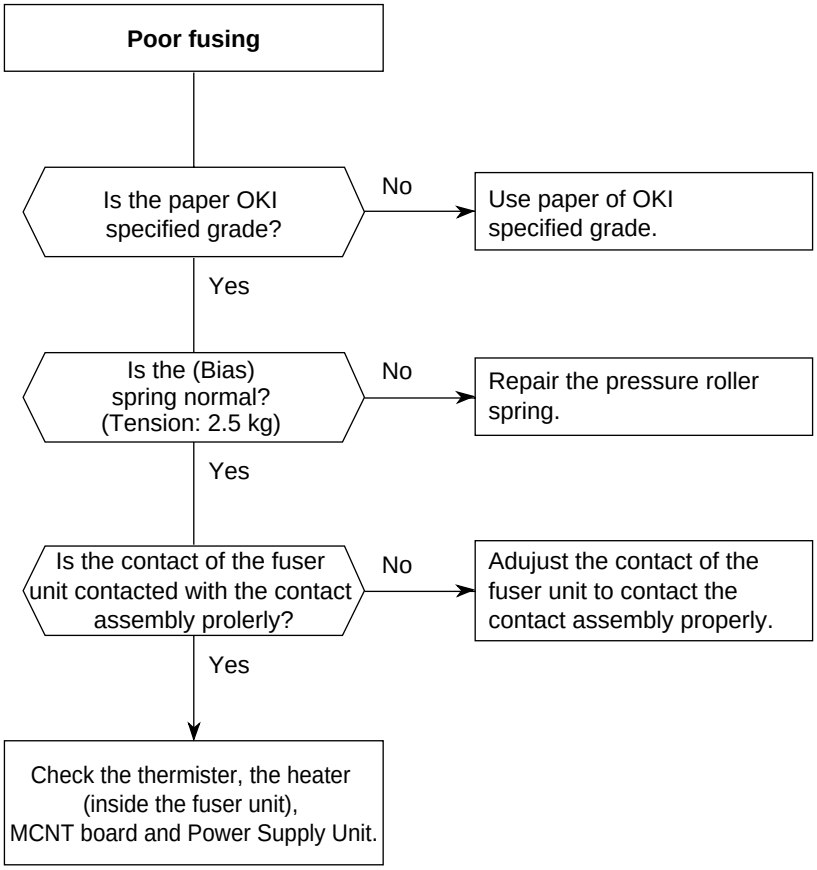
**Troubleshooting flow chart 12:**



**Troubleshooting flow chart 13:**



**Troubleshooting flow chart 14:**


Poor fusing
Is the paper OKI specified grade?
No
Use paper of OKI specified grade.
Yes
Is the (Bias) spring normal? (Tension: 2.5 kg)
No
Repair the pressure roller spring.
Yes
Is the contact of the fuser unit contacted with the contact assembly prolerly?
No
Adujust the contact of the fuser unit to contact the contact assembly properly.
Yes
Check the thermister, the heater (inside the fuser unit), MCNT board and Power Supply Unit.

# *CHAPTER 8*

# *DIPSWITCHS SETTING TABLES*

WN5 (Setting as of May 17, 1998)

Each country's hardware parameters comparison table.

| Dip-switch No. | | Sweden | Finland | The Netherlands | Ireland | Portugal | New Zealand | Australia | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| S1 | 1 | ON | ON | ON | ON | ON | ON | ON | Cascade connection |
| | 2 | ON | ON | ON | ON | ON | ON | ON | |
| | 3 | OFF | OFF | OFF | ON | OFF | ON | ON | Ring impedance |
| | 4 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | |
| | 5 | OFF | OFF | OFF | ON | OFF | OFF | OFF | |
| | 6 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | |
| S3 | 1 | OFF | OFF | OFF | OFF | ON | OFF | OFF | DC loop resistance |
| | 2 | OFF | OFF | OFF | OFF | ON | OFF | ON | |
| S4 | 1 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | Ring sensitivity adjustment |
| | 2 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | |

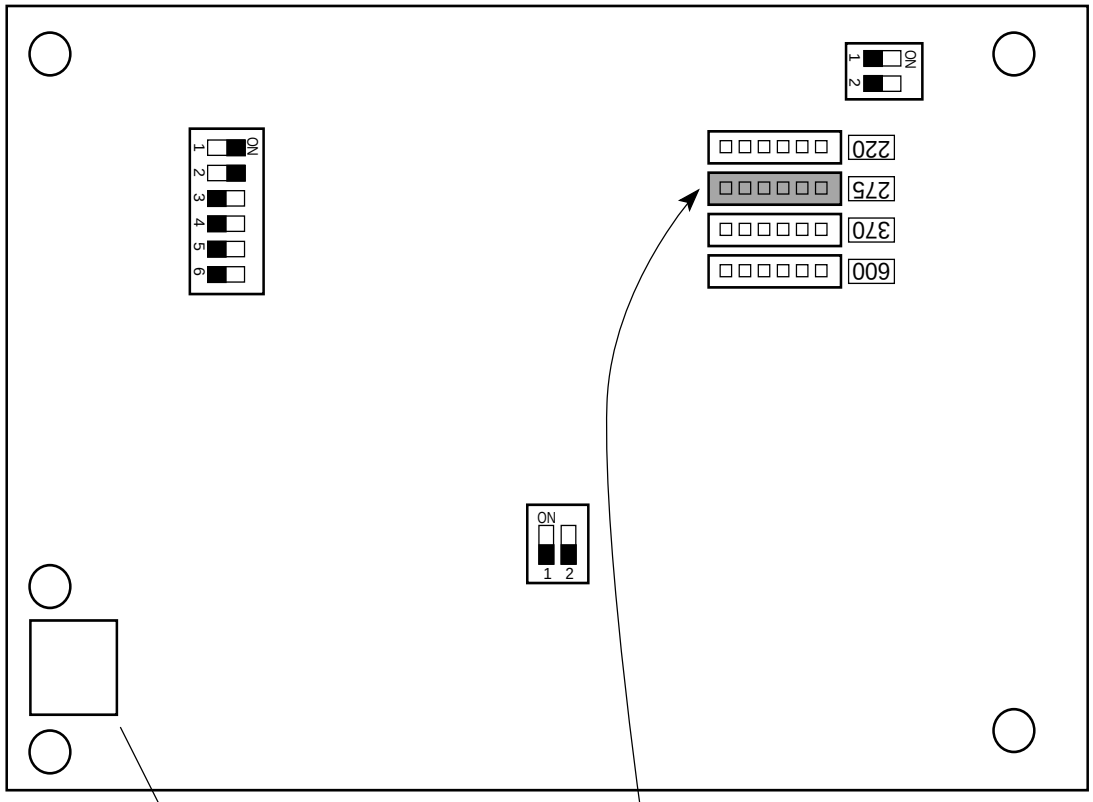
| Dip-switch No. | | Belgium | Spain | Greece | Italy | Norway | Denmark | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| S1 | 1 | ON | ON | ON | OFF | ON | ON | | Cascade connection |
| | 2 | ON | ON | ON | OFF | ON | ON | | |
| | 3 | OFF | OFF | OFF | OFF | OFF | OFF | | Ring impedance |
| | 4 | OFF | OFF | OFF | OFF | OFF | OFF | | |
| | 5 | ON | OFF | OFF | OFF | OFF | OFF | | |
| | 6 | ON | OFF | OFF | OFF | OFF | OFF | | |
| S3 | 1 | OFF | ON | OFF | OFF | OFF | ON | | DC loop resistance |
| | 2 | OFF | ON | OFF | OFF | ON | ON | | |
| S4 | 1 | ON | ON | OFF | OFF | OFF | OFF | | Ring sensitivity adjustment |
| | 2 | OFF | OFF | OFF | OFF | OFF | OFF | | |

## 1 Sweden (40044301)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "275".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

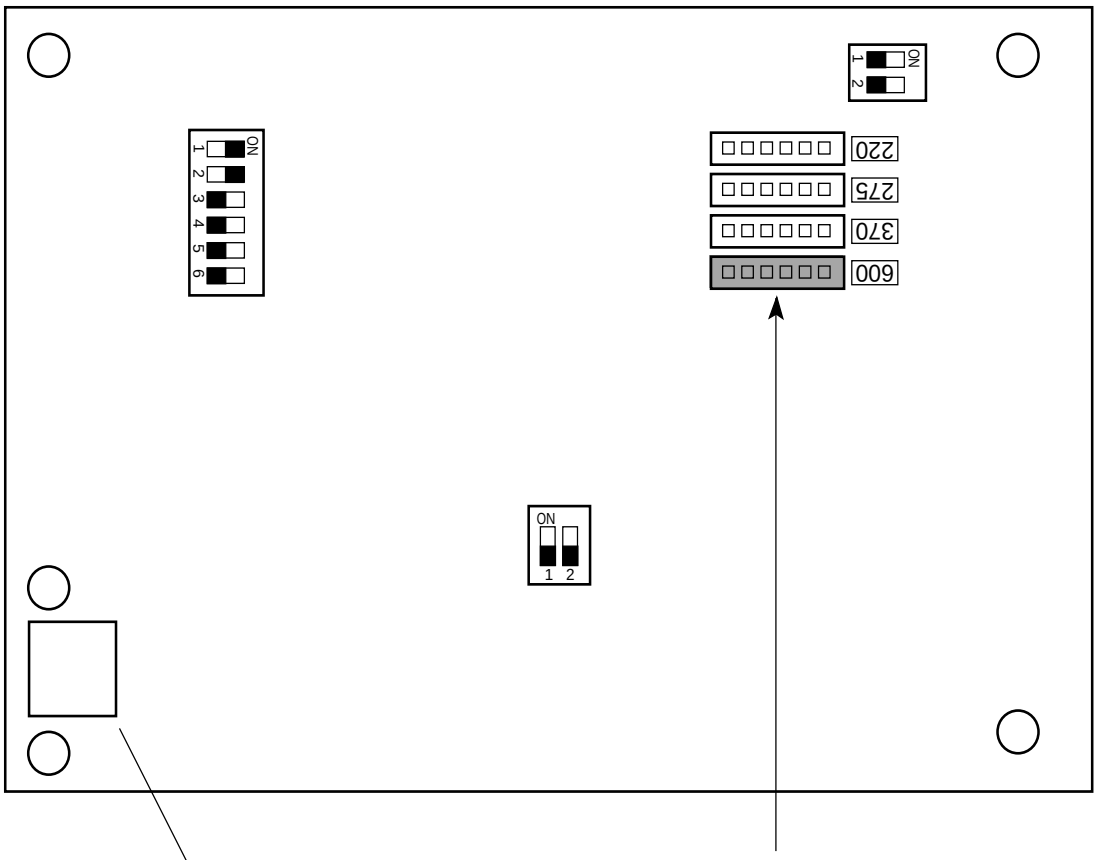
Marking a portion "S" with red oil ink.

## 2 Finland (40044302)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

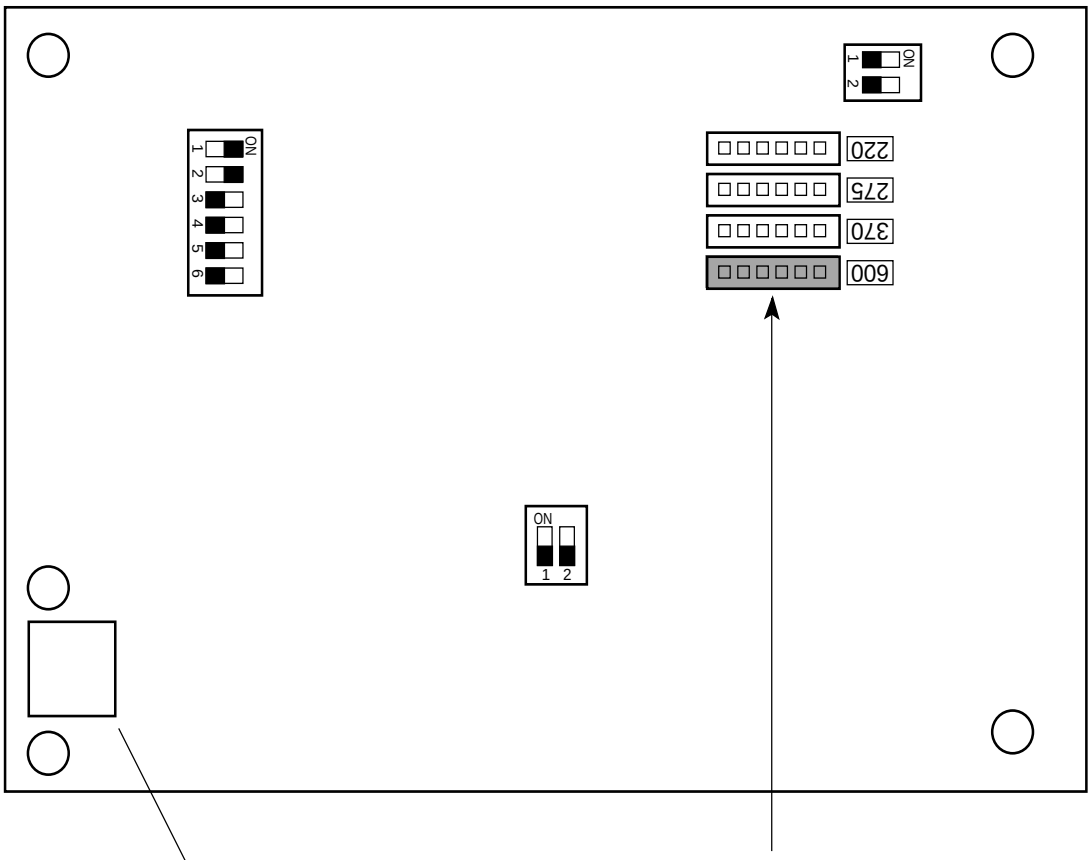
Marking a portion "SF" with red oil ink.

### 3 Holland (40044303)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

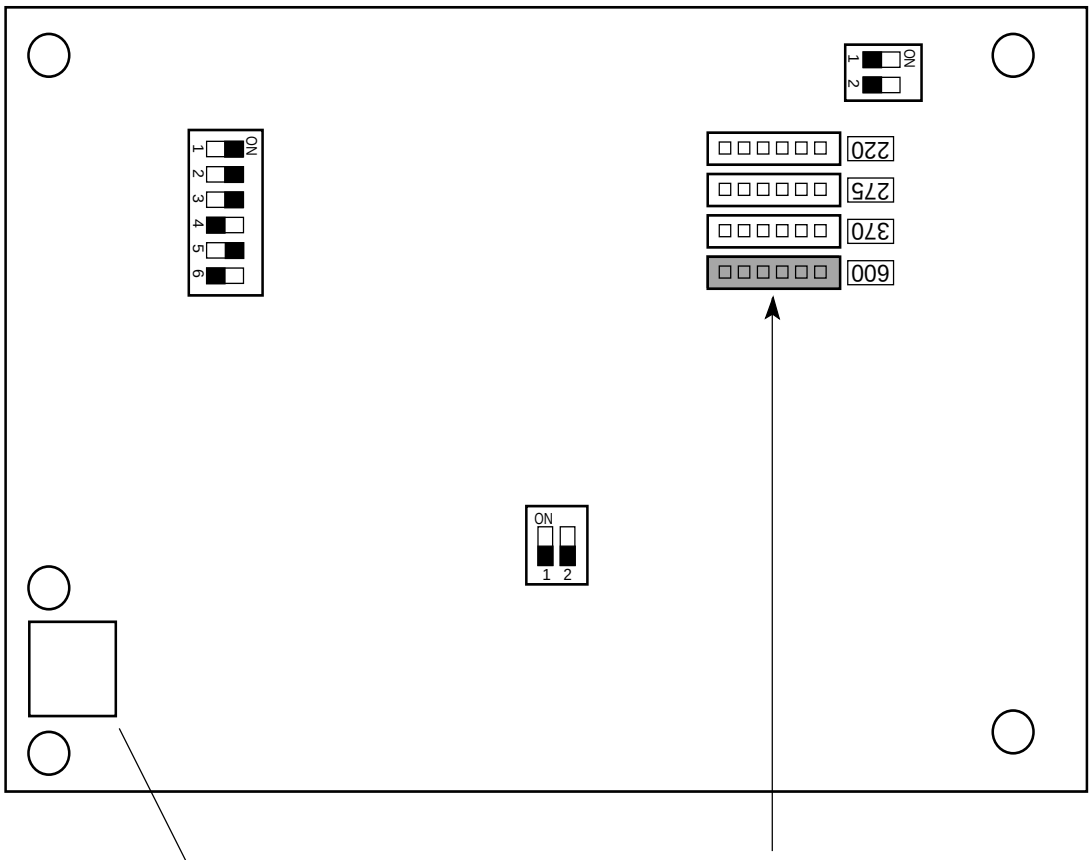
Marking a portion "NL" with red oil ink.

## 4 Ireland (40044304)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | | |
|---|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

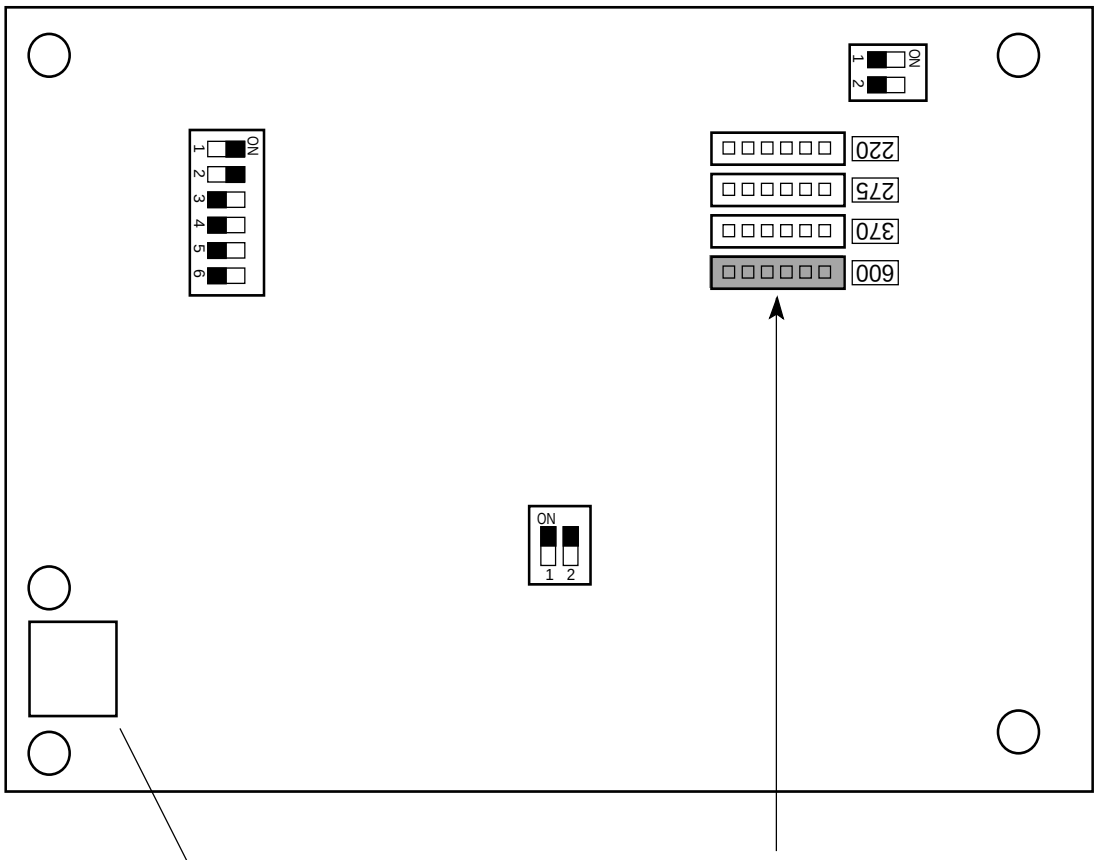
Marking a portion "IRL" with red oil ink.

## 5 Portugal (40044305)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

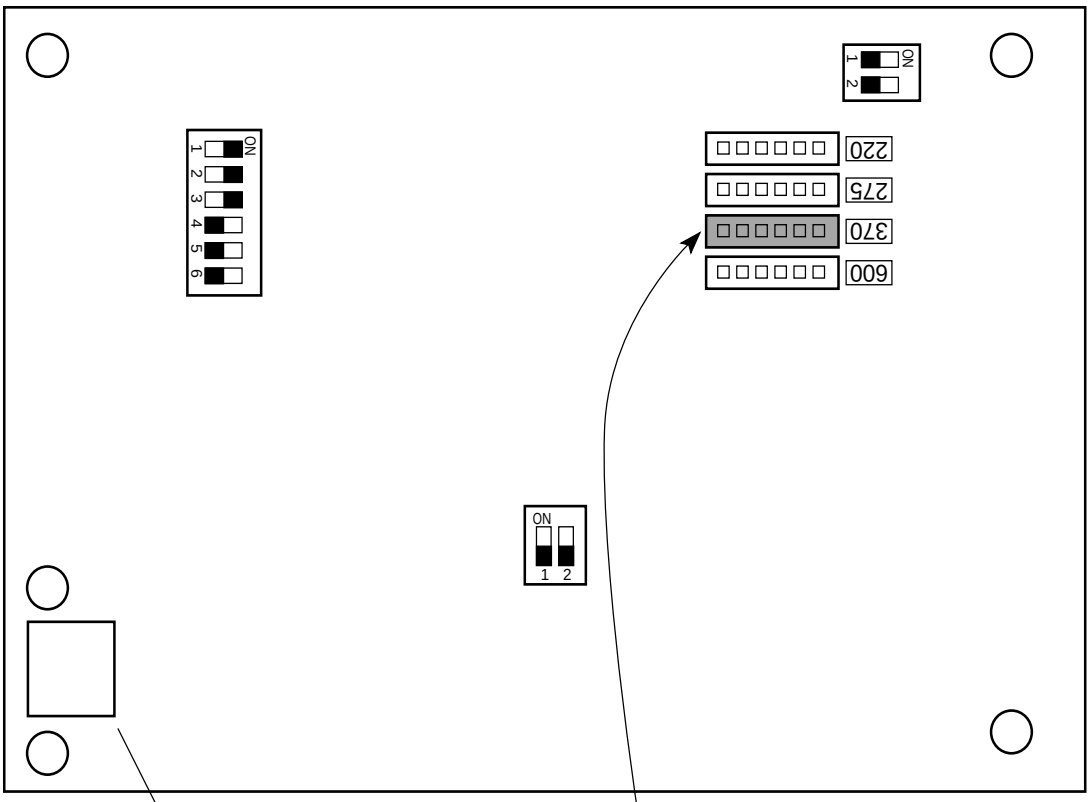
Marking a portion "P" with red oil ink.

## 6 New Zealand (40044306)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "370".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

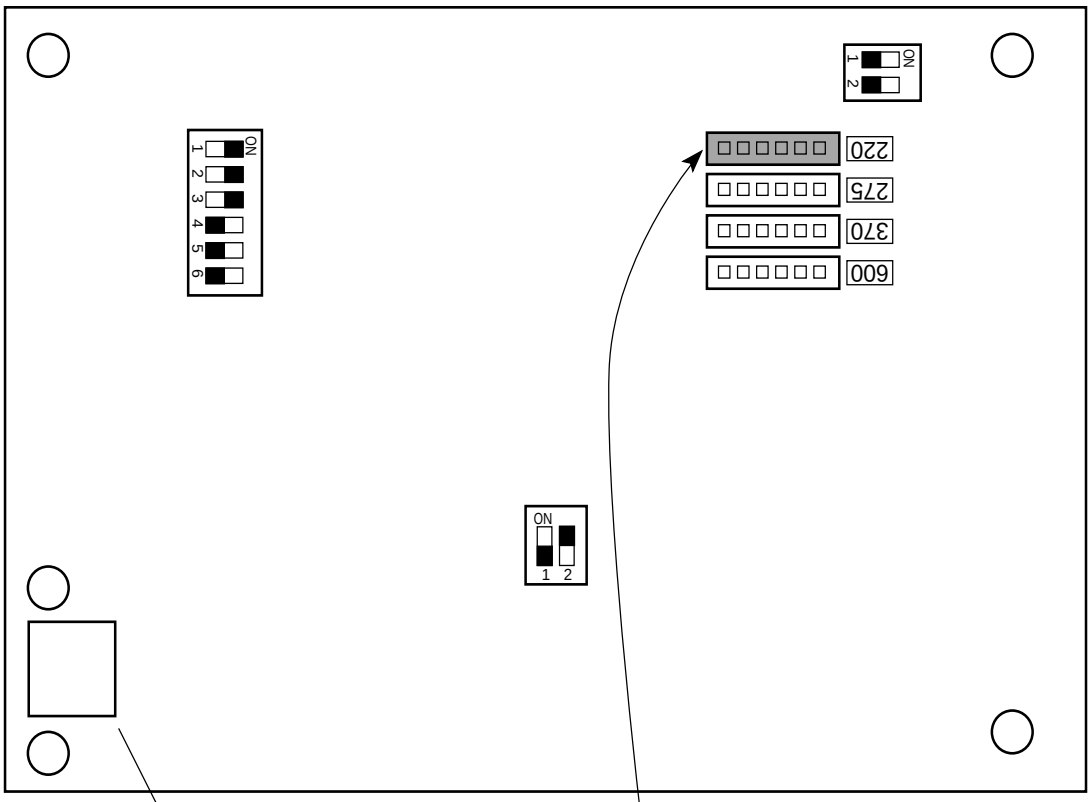
Marking a portion "NZ" with red oil ink.

## 7 Australia (40044307)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "220".

| | | | | | |
|---|---|---|---|---|---|
| B | N L | IRL | N | D K | |
| S | S F | I | G R | E | |
| P | AUS | N Z | S P | M A | |
| X 1 | X 2 | X 3 | X 4 | X 5 | |

Magnified figure

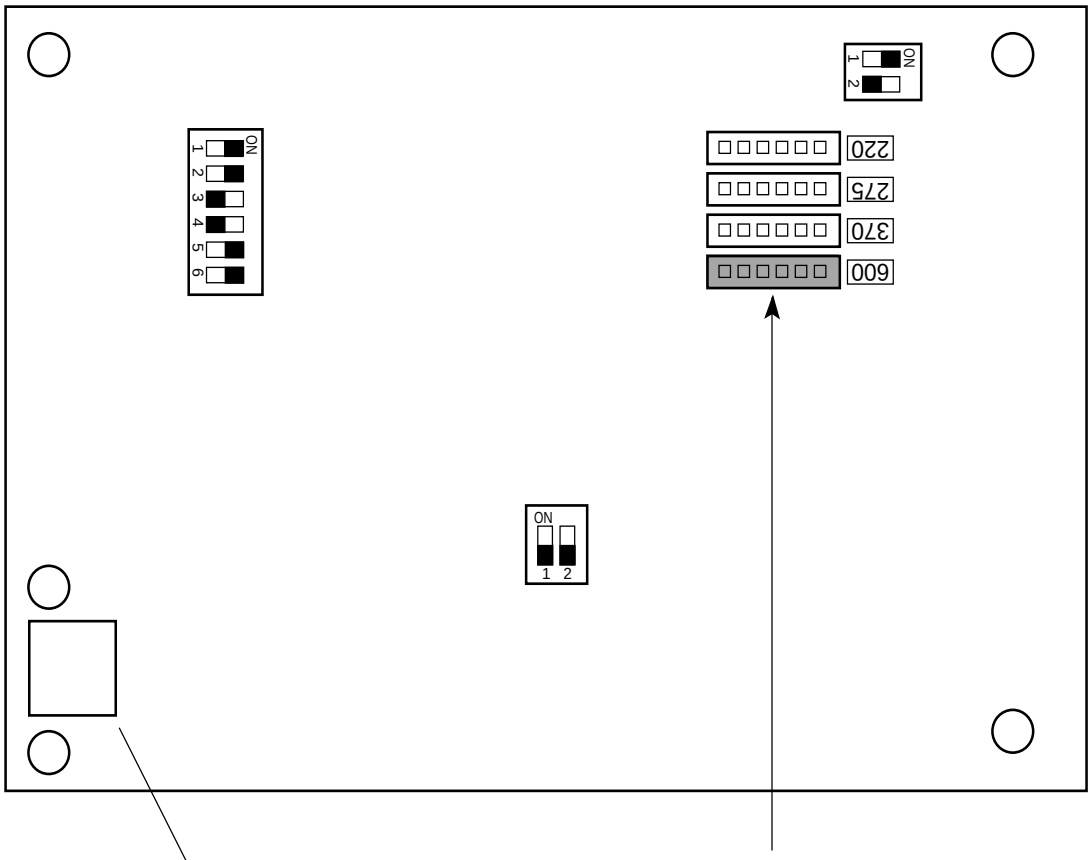
Marking a portion "AUS" with red oil ink.

## 8 Belgium (40044308)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

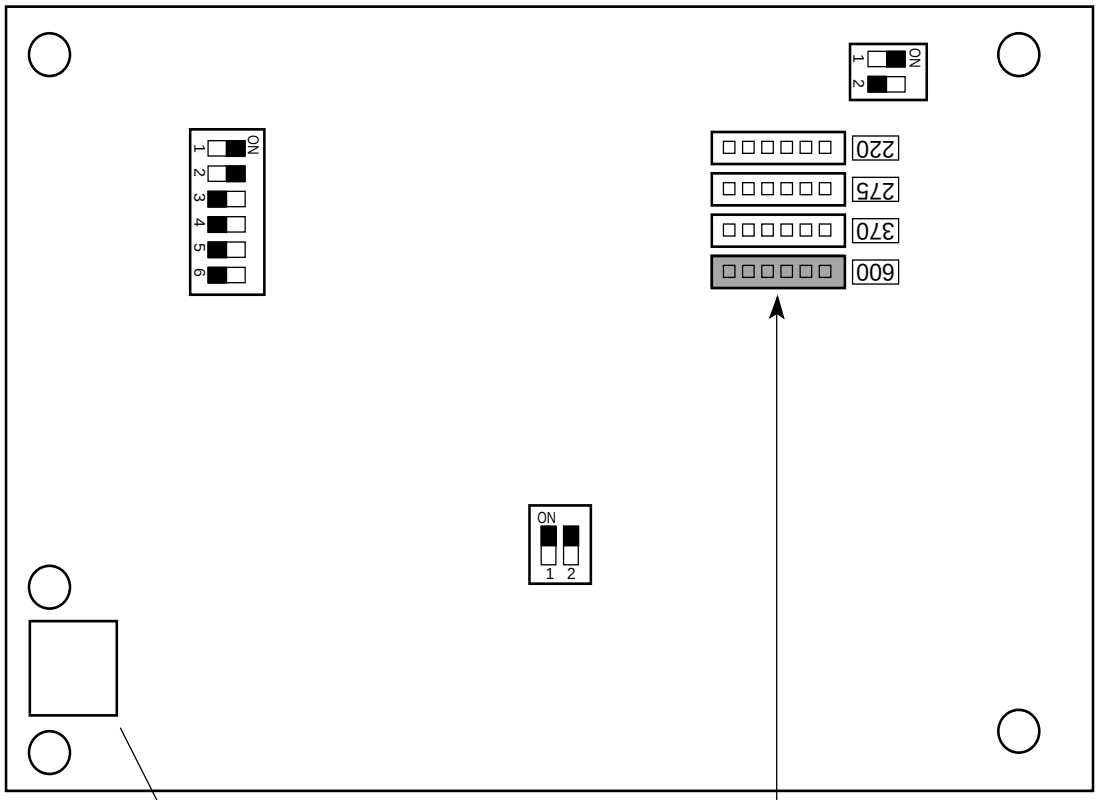
Marking a portion "B" with red oil ink.

## 9 Spain (40044309)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

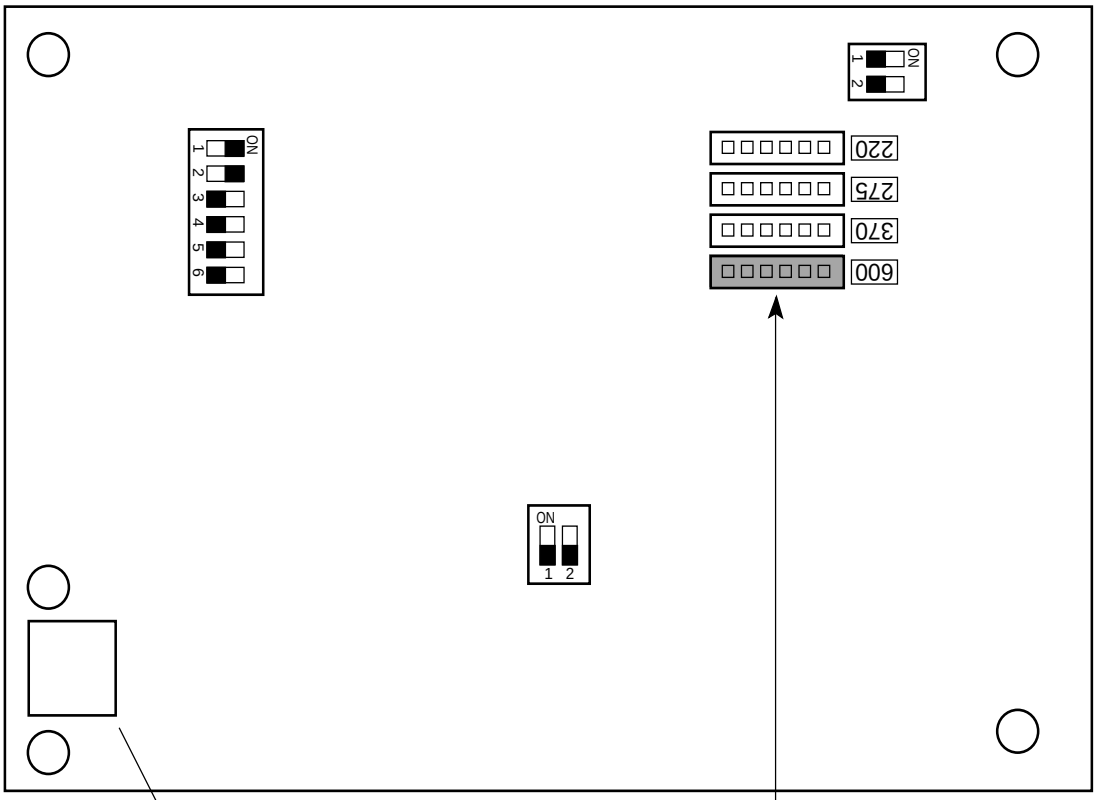
Marking a portion "E" with red oil ink.

## 10 Greece (40044310)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

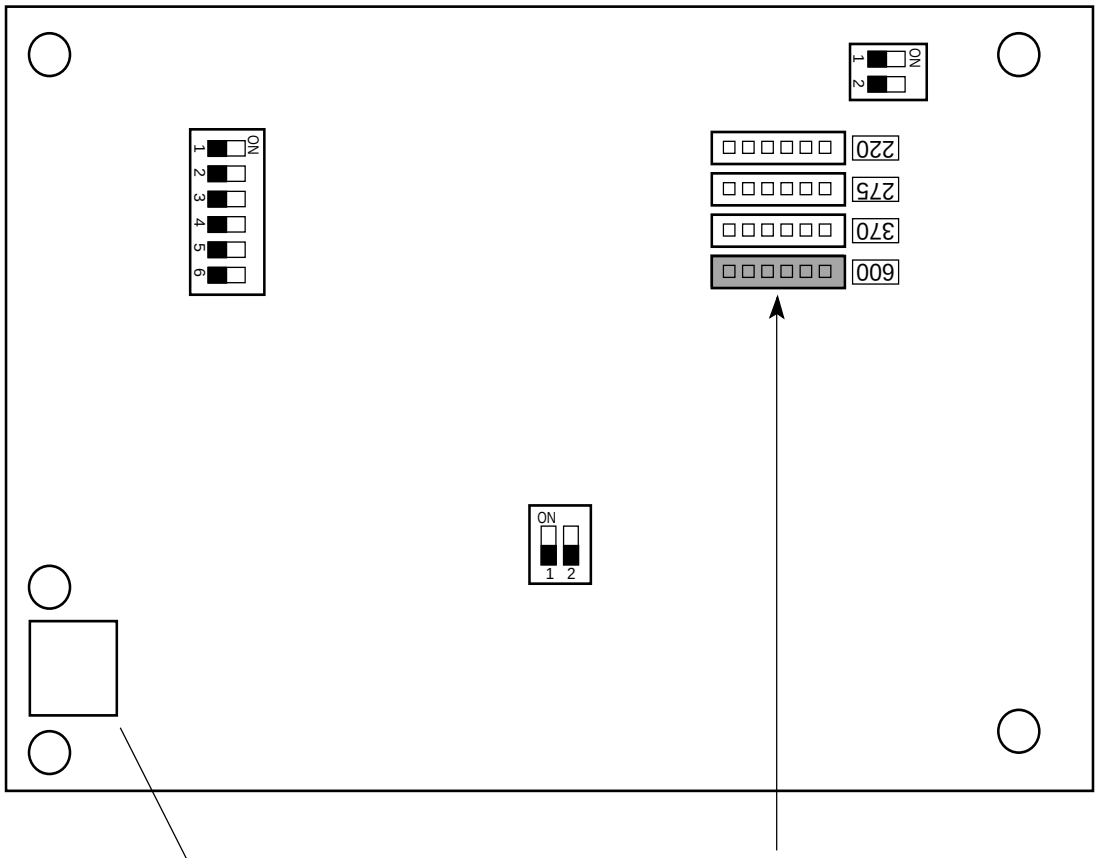
Marking a portion "GR" with red oil ink.

## 11 Italy (40044312)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

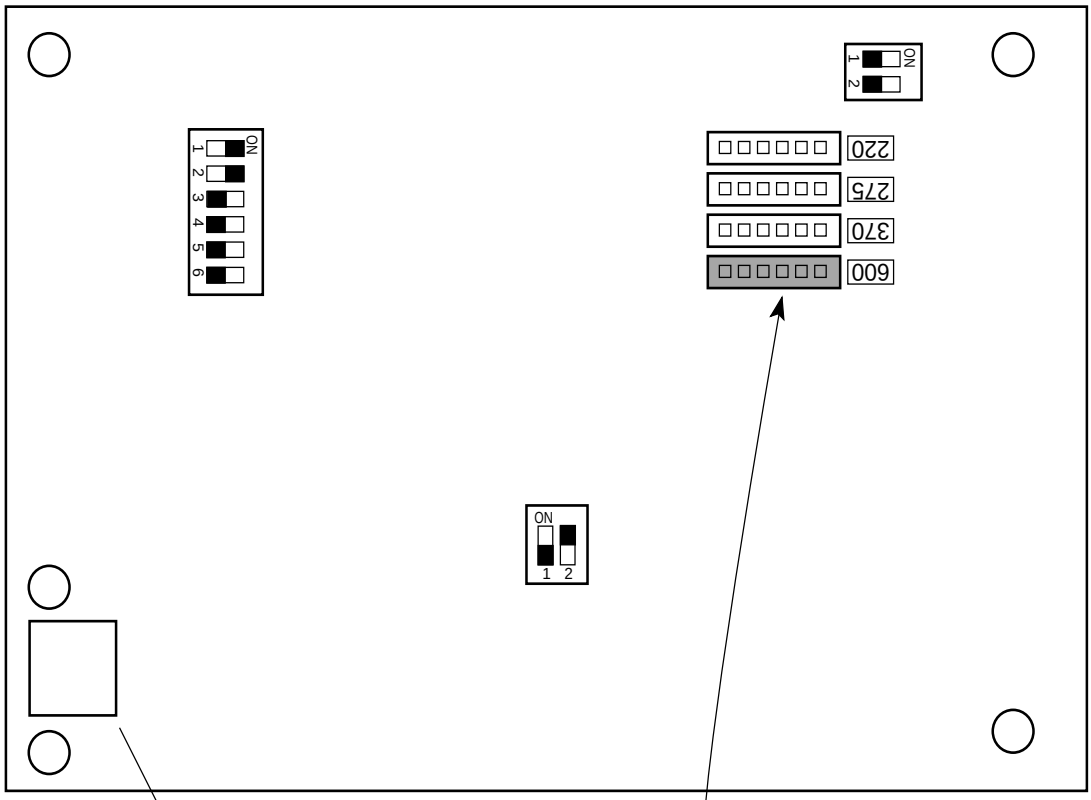
Marking a portion "I" with red oil ink.

## 12 Norway (40044313)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | | |
|---|---|---|---|---|---|
| B | N L | IRL | N | D K | |
| S | S F | I | G R | E | |
| P | AUS | N Z | S P | M A | |
| X 1 | X 2 | X 3 | X 4 | X 5 | |

Magnified figure

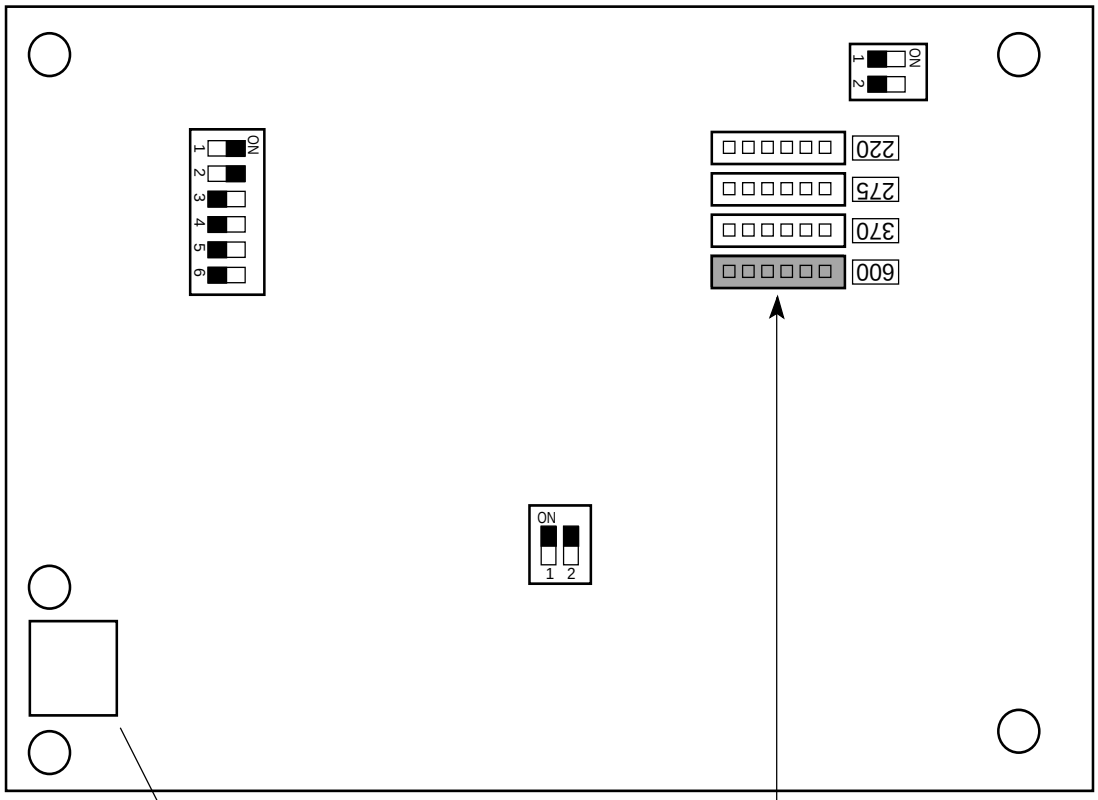
Marking a portion "N" with red oil ink.

## 13 Denmark (40044314)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Put short-plug (40095701) into designated connector.

For detail, see the figure below.




Put short-plug (40095701) into connector indicated "600".

| | | | | |
|---|---|---|---|---|
| B | N L | IRL | N | D K |
| S | S F | I | G R | E |
| P | AUS | N Z | S P | M A |
| X 1 | X 2 | X 3 | X 4 | X 5 |

Magnified figure

Marking a portion "DK" with red oil ink.

DN5 (Setting as of May 17, 1998)

Each country's hardware parameters comparison table.

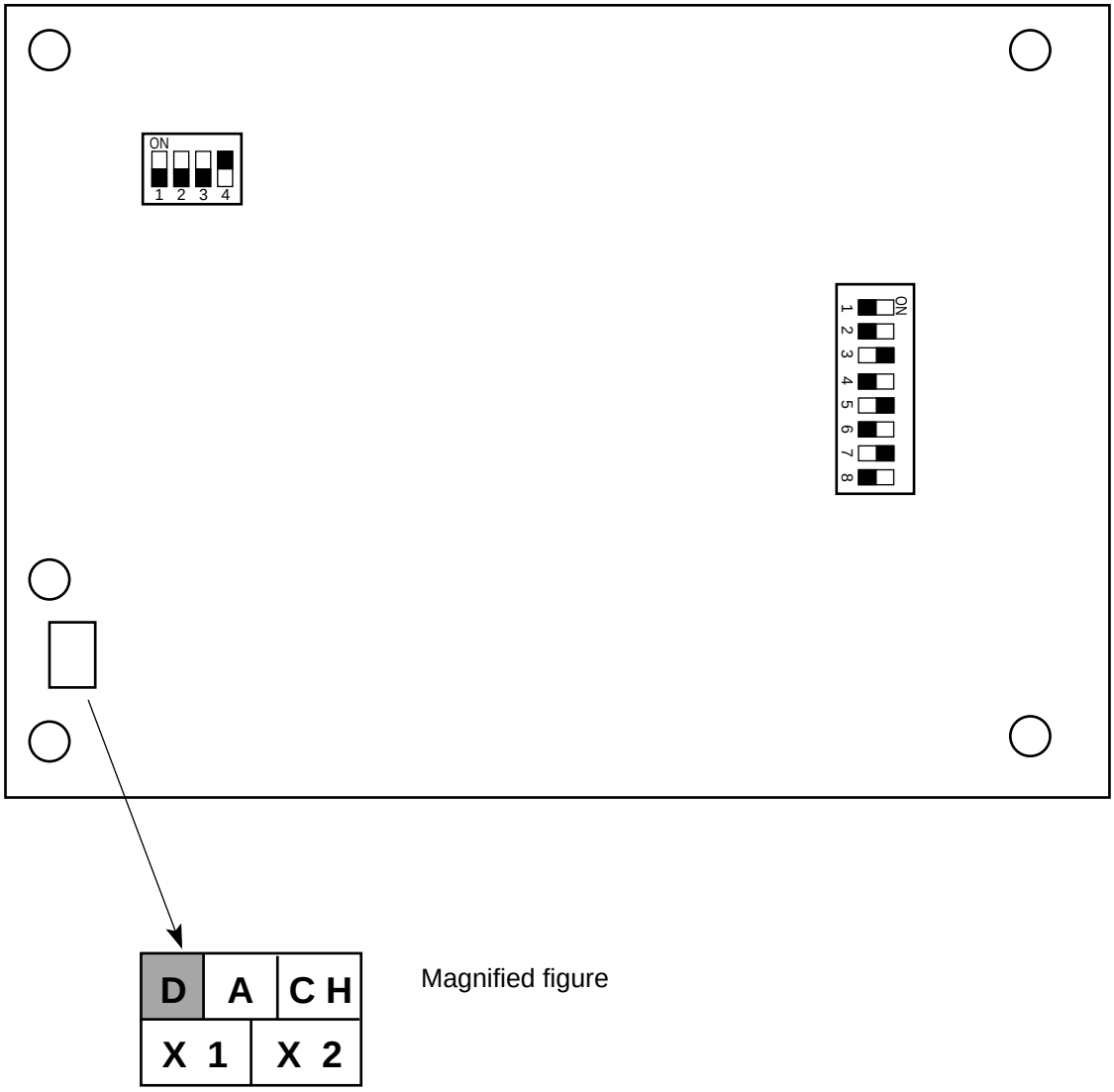
| Dip-switch No. | | Germany | Switzer-land | Austria | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| S1 | 1 | OFF | OFF | OFF | | | | | Cascade connection |
| | 2 | OFF | OFF | OFF | | | | | |
| | 3 | OFF | OFF | OFF | | | | | Not used |
| | 4 | ON | OFF | OFF | | | | | Ring impedance |
| S4 | 1 | OFF | OFF | OFF | | | | | Ring sensitivity adjustment |
| | 2 | OFF | OFF | OFF | | | | | |
| | 3 | ON | ON | OFF | | | | | Impedance matching switch |
| | 4 | OFF | OFF | ON | | | | | |
| | 5 | ON | ON | OFF | | | | | Receiving Gain (for Paralle pickup) |
| | 6 | OFF | OFF | ON | | | | | |
| | 7 | ON | ON | OFF | | | | | Receiving Gain |
| | 8 | OFF | OFF | ON | | | | | |

**1 Germany (40044101)**

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.

For detail, see the figure below.




Magnified figure

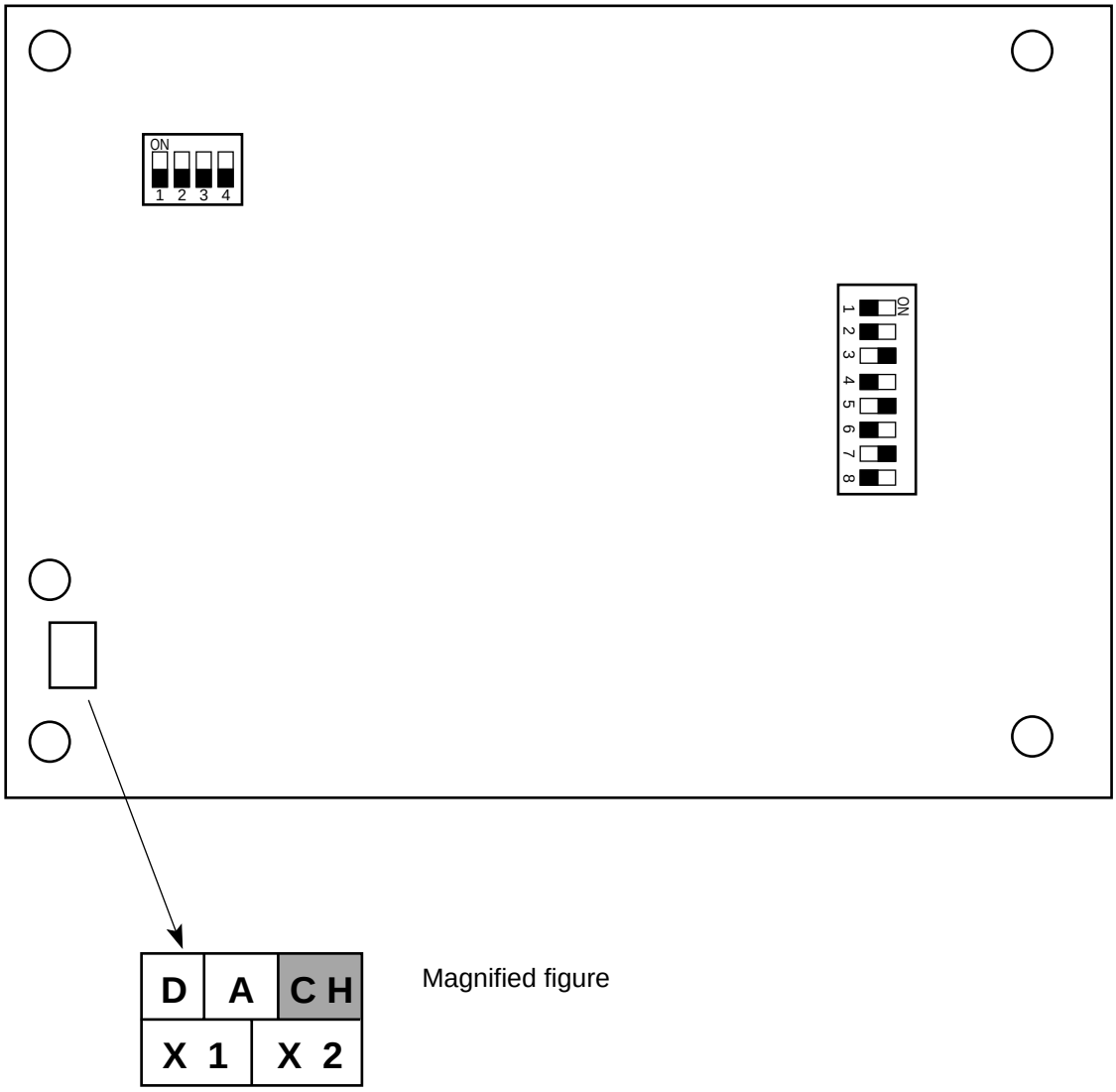
Marking a portion "D" with red oil ink.

## 2 Switzerland (40044102)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.

For detail, see the figure below.



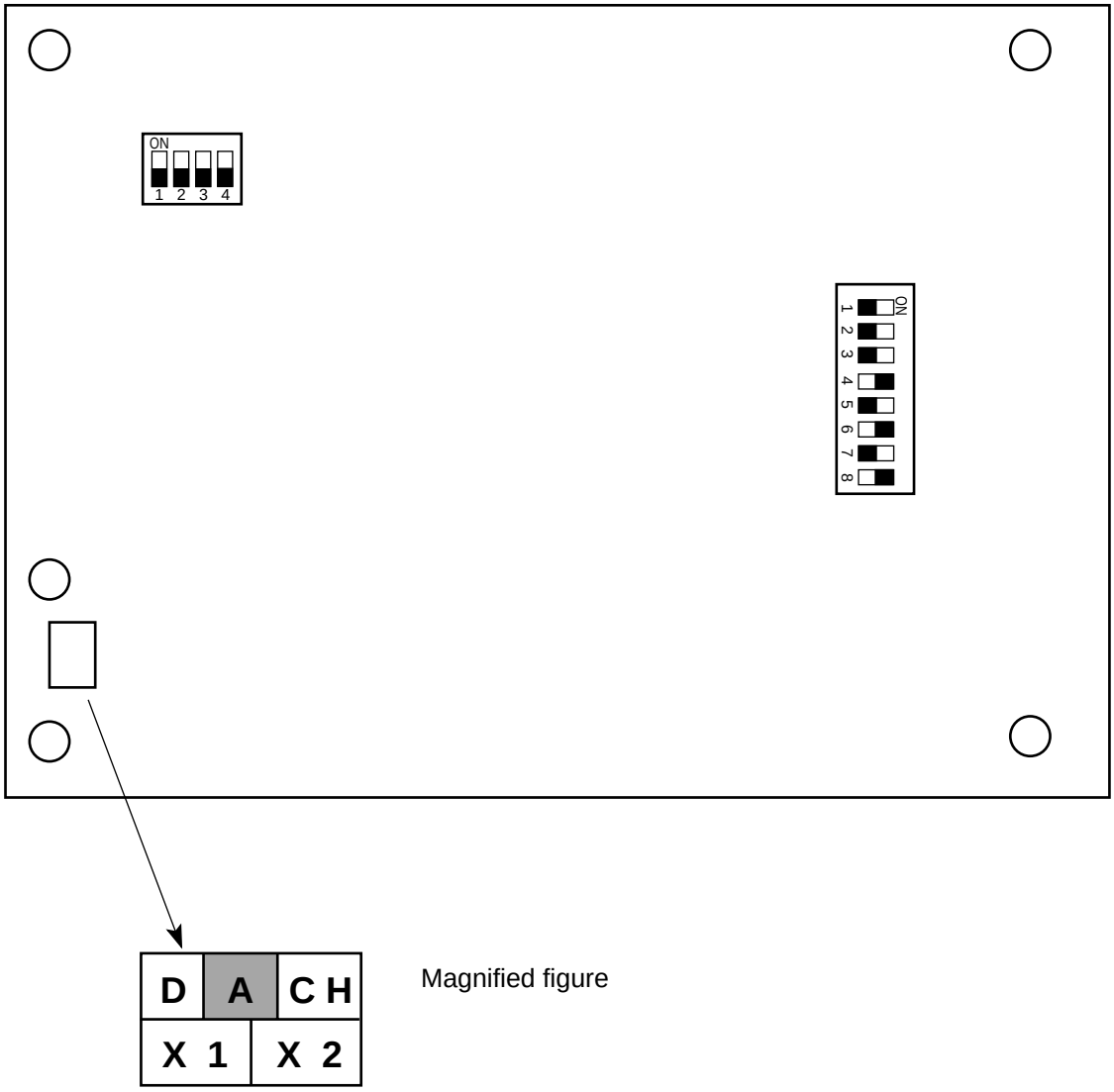

Marking a portion "CH" with red oil ink.

### 3 Austria (40044103)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.

For detail, see the figure below.




Magnified figure

Marking a portion "A" with red oil ink.

FN5 (Setting as of May 17, 1998)

Each country's hardware parameters comparison table.

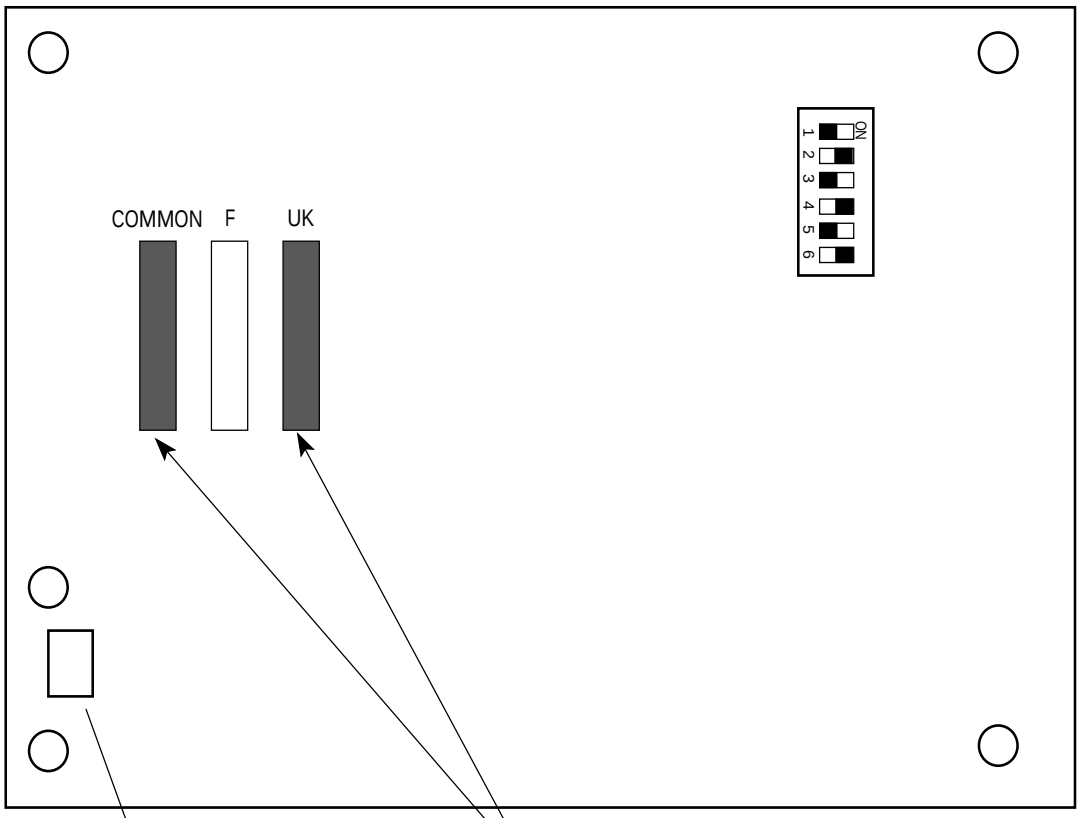
| Dip-switch No. | | United Kingdom | France | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| S5 | 1 | OFF | ON | | | | | | Impedance matching switch |
| | 2 | ON | OFF | | | | | | |
| | 3 | OFF | ON | | | | | | Receiving Gain (for Paralle Pickup) |
| | 4 | ON | OFF | | | | | | |
| | 5 | OFF | ON | | | | | | Receiving Gain |
| | 6 | ON | OFF | | | | | | |

## 1 United kingdam (40044401)

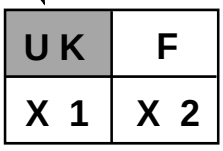
This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Setting connector (40095601)

For detail, see the figure below.




Connect these two connectors (COMMON and UK) with the cable 40095601.




Magnified figure

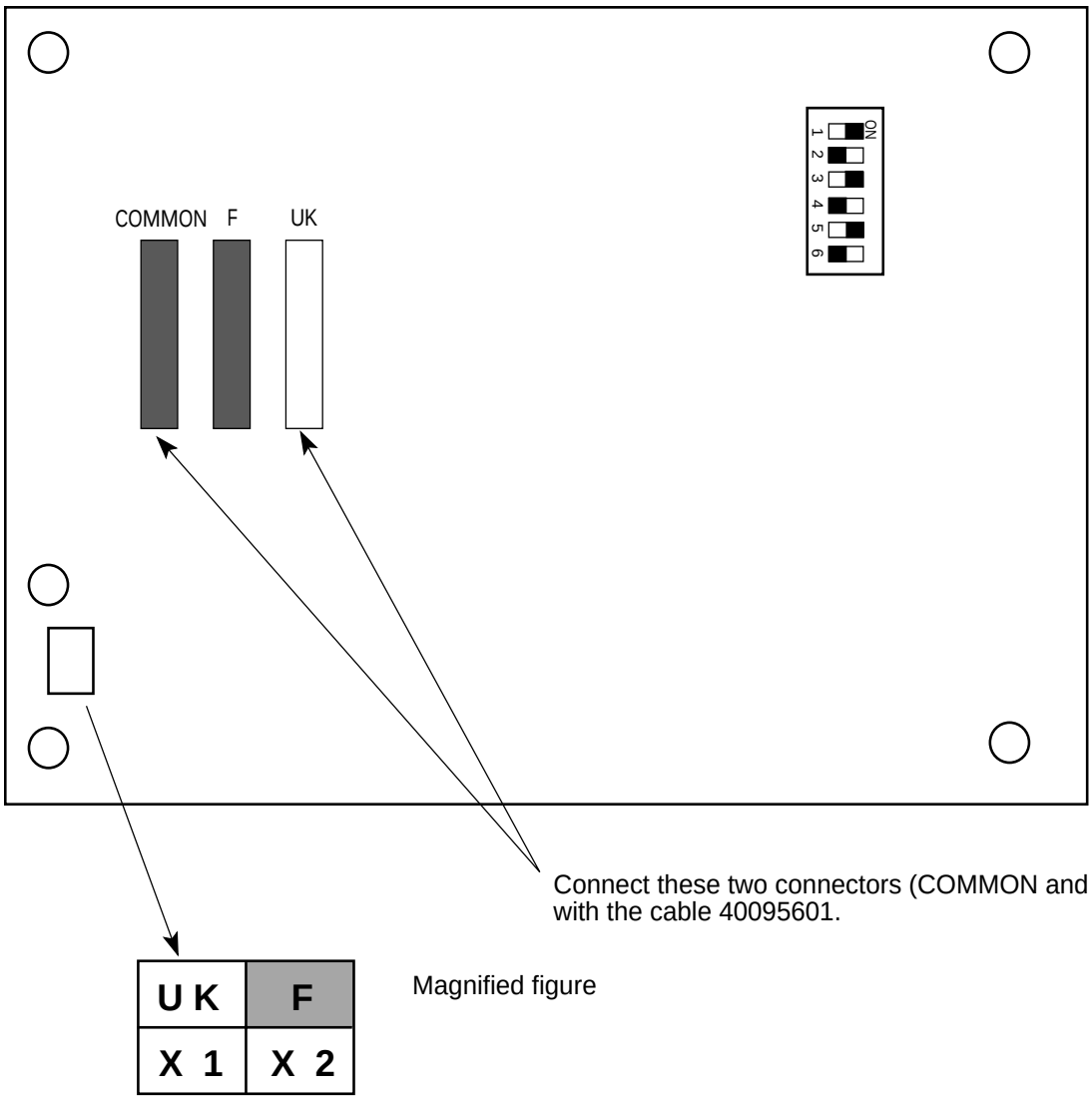
Marking a portion "UK" with red oil ink.

## 2 France (40044402)

This section gives the following instruction.

- DIP switch setting
- Instructions of marking with red oil ink.
- Setting connector (40095601)

For detail, see the figure below.




Marking a portion "F" with red oil ink.

# Appendix A

# PC Board Descriptions and Operation

## Second Edition

## December, 1998

## Oki Data Corporation

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# PREFACE

This manual has been designaed to provide basic information concerning the electric section for the component-level maintenance of the OKIOFFICE 84/OKIFAX 4500 facsimile transceiver. It includes such information which will help maintenance personnel to understand the circuit operations.

This manual will also provide the reader information concerning the functions of units and the relationships among the units which will assist you in conducting unit-level maintenance.

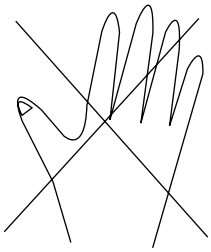
Detailed circuit diagram has been omitted from this manual to avoid duplications of contents with other associated manuals, For information not contained in this manual, refer to:

OKIOFFICE 84/OKIFAX 4500 CIRCUIT DIAGRAM/PARTS LIST (Appendix C)

## DANGER

Do Not
Touch !

HIGH VOLTAGE



You may be subjected to high-voltage electric shock by touching the following parts without an insulating material:

a. High-voltage unit

b. Contact ass'y

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This manual is subject to alteration without prior notification.

## A1.1 Unit Configuration and Block Diagram

1. The unit configuration is as follows:

OKIOFFICE84/OKIFAX4500 ASSEMBLY

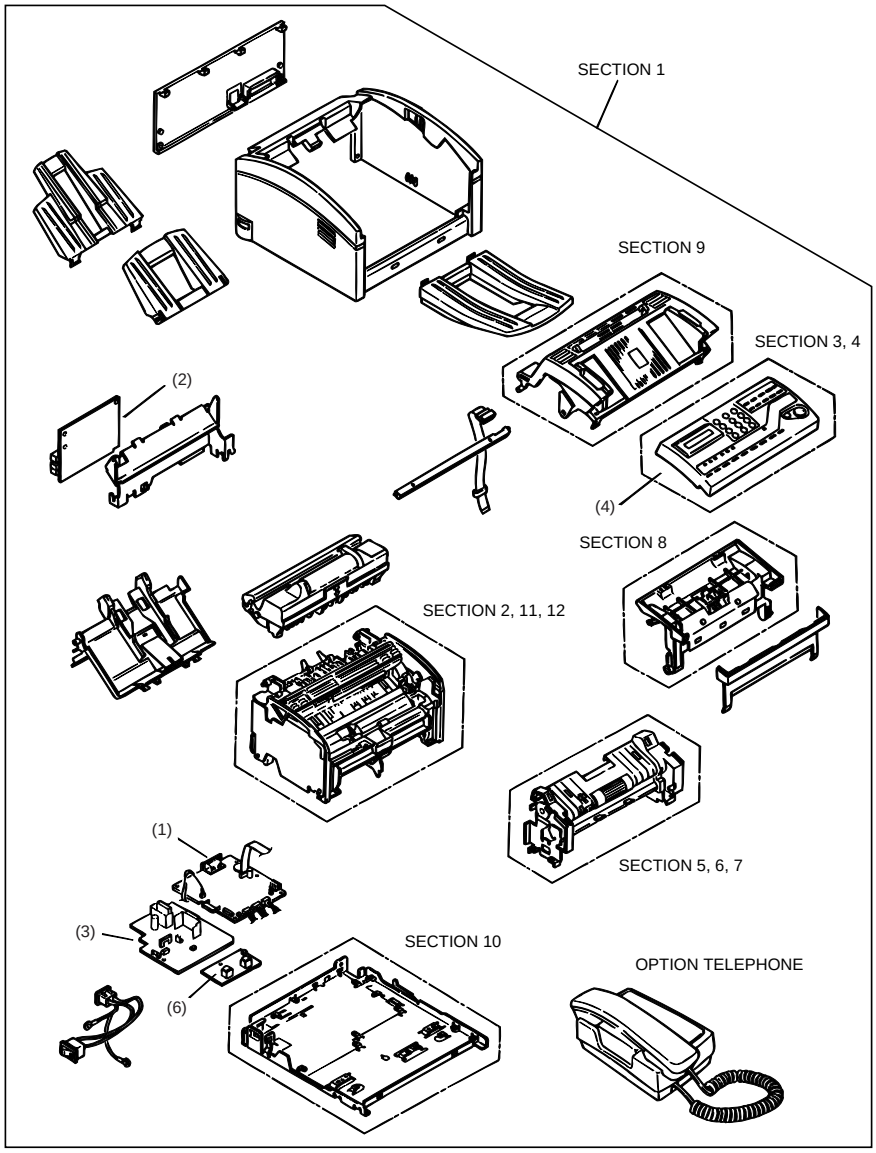



**Figure A.1.1 Unit Configuration (Modifying)**

(1) Main control board (R51)
(2) Network control unit (NCU)
(3) Power supply unit (MPW1446 (230V), MPW1546 (120V)
(4) Operation panel board (04W)
(5) High Voltage Board (P2H)
(6) High Voltage Board (P6L)

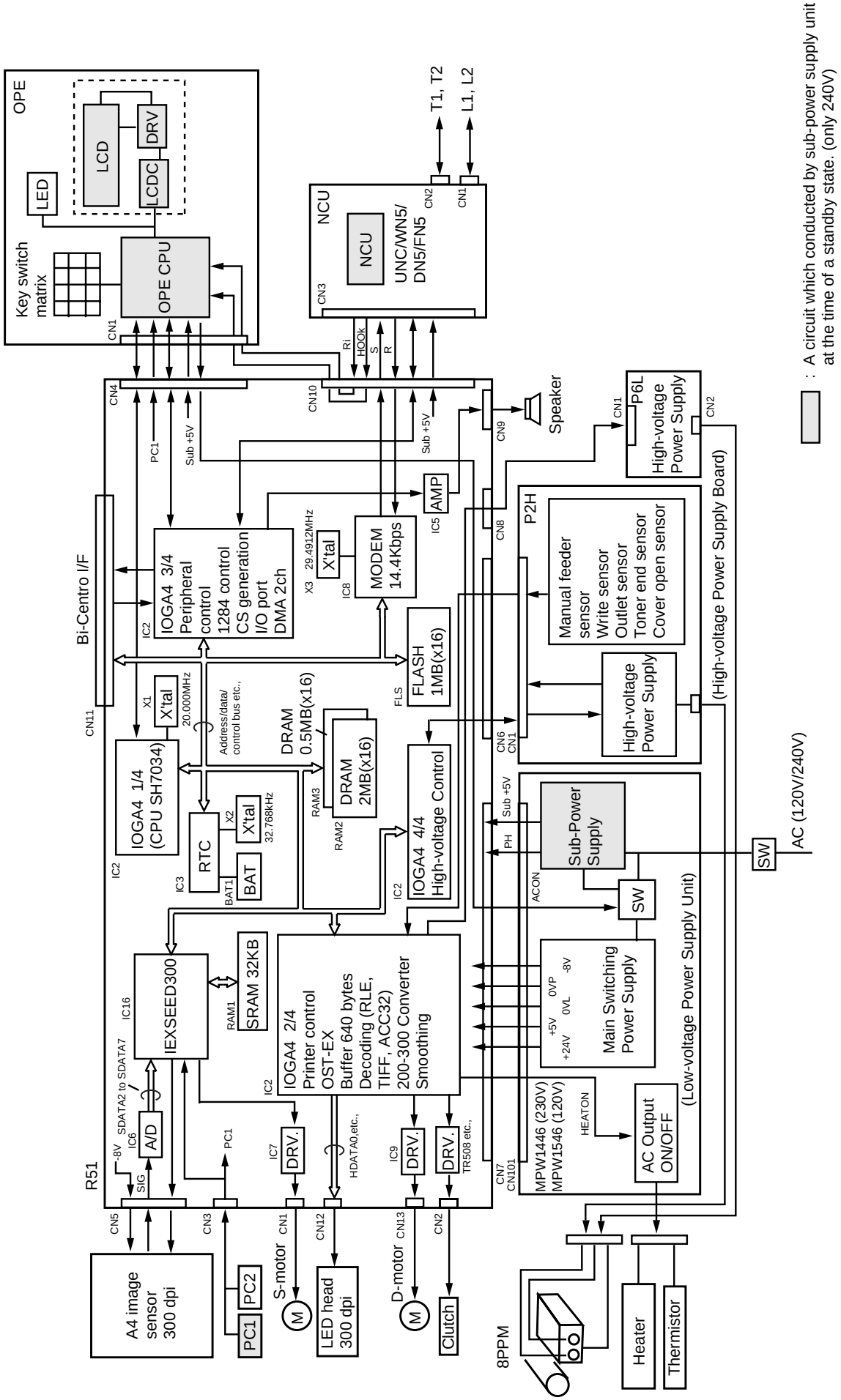



**Figure A1.2 OKI OFFICE84/OKIFAX 4500 Block Diagram**

Meaning of abbreviations used in Block Diagram

| | | |
|---|---|---|
| A/D | : | Analog-to-digital converter |
| AMP | : | Amplifier |
| BATT | : | Battery |
| CNi | : | Connector number i |
| CPU | : | Central processing unit |
| D-MOTOR | : | Drum motor |
| DRV | : | Motor drive |
| DRAM | : | Dynamic random-access memory |
| IEXSEED300 | : | Image proccessing gate array |
| FLASH | : | Flash memory |
| IOGA 4 | : | Input output gate array |
| PCi | : | Photocoupler number i |
| POW.UNIT | : | Power supply unit |
| RTC | : | Real time clock |
| S-MOTOR | : | Send motor |
| SRAM | : | Static random-access memory |
| X’tal | : | Crystal oscillator |

## A1.2 Function of Each Unit

The section describes the principal functions of the individual units of the OKIOFFICE84/ OKIFAX 4500 series electrical sections.

Figure A1.2 shows the pertinent block diagram.

(1) R51 board

- IOGA4 (Input/output gate array 4) 1/4: CPU SH7034
  Basic processor
  Scanning control
  Picture processing control
  Printing control
  SIO (Serial input/output) control
- IOGA4 (Input/output gate array 4) 2/4, 3/4, 4/4
  Scanning control
  Printing control
  Peripheral input/output control
- Flash memory (Instead of EP-ROM and SRAM)
  Memory storage for work area.
- DRAM
  Memory storage for ECM operations, memory broadcast, delayed broadcast, etc.
- Back-up battery circuit
- Real-time clock IC
- Audio monitor circuit
- Contact image sensor control
- I EXSEED300
  Image data processing
- SRAM
  Memory storage for image picture data
- Supervision of the following external statuses:
  Presence of document on hopper
  Presence of document at scanning position
- Send motor control
- Drum motor control
- Modem chip
  Modulation and demodulation for V.33 and V.17
  Modulation and demodulation for V.29 and V.27 ter
  Modulation and demodulation for V.21
  Generation of single-frequency signals for tonal signals
  Detection of single-frequency tonal signals
  Generation of dual time multiple-frequency signals for tone dialing

(2) Operation panel unit: O4W board

- Supervision of switches on operation panel
- Control of LEDs on operation panel
- Control of LCD on operation panel

  LED : Light-emitting diode
  LCD : Liquid crystal display

(3) NCU board

UNC5 ------- For US and Canada
WN5 --------- For Denmark, Norway, Sweden, Finland, The Netherlands, ireland, portugal,New Zealand, Australia, Belgium, Spain, Greece and Other countries
DN5 ---------- For Germany, Switzerland and Austria
FN5 ---------- For France and UK

- Conversion of receive data and receive signals to internal signal level
- Conversion of send data and send signals to external signal level
- Generation of dial pulses to telephone line
- Detection of ringing signal
- Detection of busy tone (conjunction with Modem unit)
- Detection of hook up signal
- Interface with telephone handset (option)
- Output of send data and send signals to telephone line
- Input of receive data and receive signals from telephone line

(4) Power supply unit: MPW1446 (230V)/MPW1546 (120V), P6L, P2H

- Conversion of main alternating current to the following direct currents:
  +5V DC power supply
  -8V DC power supply
  +24 V DC power supply
  +30 V DC power supply
- Supplying of main alternating current to fuser unit
- Generation of medium voltages +300V, -300V, +400V, -450V and 0V
- Generation of high voltages -1.35 kV, -0.75 kV and +3.5 kV

## A2.1 Explanation of Signal Flow

### (1) Copy Mode

Figure A2.1 shows the picture signal route in local copy mode
One-line picture data is transferred to A/D converter (analog/digital) via operational amplifier from the scanning unit (CIS: contact image sensor) as an analog data. After conversion from analog data to 6-bit digital data by A/D converter, the picture data is sent to IEXSEED (image processing LSI) and SRAM. Here, the picture data undergoes various kinds of picture processings (IEXSEED and SRAM), converted to two-level binary data (black and white) and then sent to IOGA4 (scanning control). The one-line binary picture data from IOGA4 is stored into DRAM. When the data for one page has been stored in the DRAM, the data is read out from the DRAM and sent to IOGA4. The data is converted into a serial data by the picture control of IOGA4 and transferred to the LED print head for printing as HDATA0. Writing of data into the page memory is also possible during the printing operation.

### (2) G3 Send Mode

Figure A2.2 shows the G3 send picture signal route

In the G3 mode, the data transfer route from the scan unit up to the DRAM is the same as in the copy mode described in (1).

The picture data for one-line is transferred from DRAM to IOGA4 (CPU). The IOGA4 (CPU) performs the picture data processing (encode) for this picture data (FILLER, fill bits are inserted etc.) and again stores into the DRAM. The stored encoded data is output from DRAM to the MODEM under the control of IOGA4 (CPU). After modulation, the picture signal “S” is sent to the NCU board as the transmission data. The transmission data “S” goes through the amplifier and is sent to the telephone line L1 and L2 via the transformer T1 as high speed signal.

### (3) G3 Receive Mode

Figure A2.3 shows the G3 receive picture signal route

In the G3 mode, the high-speed picture signal arriving from the telephone line at L1 and L2 of NCU passes through the transformer T1 and the amplifier and is input to the MODEM as “R” signal. After demodulation by modem, the picture data is sent to IOGA4 (CPU). The IOGA4 (CPU) performs the picture data processing (decode) for this picture data and stores into the DRAM. Then, the stored picture data is again written into DRAM (as a page memory) by the picture processing control of IOGA4 (CPU). When the data for one page has been stored in the DRAM, the data is read out from the DRAM and sent to IOGA4. The picture data is converted into a signal data by the printer control of IOGA4 and transferred to the LED print head for printing as HDATA 0.

### (4) 300bps Send Mode

Figure A2.4 shows 300bps send protocol signal route

In G3 communication, this is the route of the procedural control signals (pre-message, post-message phases etc.) at 300bps.

The protocol send data is read into DRAM in the sequence the contents of varrious data stored in the FLASH memory area in advance under the control of IOGA4 (CPU). The contents of the frame has been edited on the DRAM by IOGA4 (CPU) and sent to MODEM via IOGA4 (CPU). HDLC (high level data link control) frame of the data is structured by the modem and converted to serial data in synchrony with the modem’s DCLK (data clock). After modulation, the protocol signal is output from “S” of the modem and sent to the telephone line L1 and L2 via the transformer T1 of NCU.

### (5) 300bps Receive Mode

Figure A2.5 shows 300bps receive protocol signal route.

In G3 communication, this is the route of the procedural control signals (pre-message, post-message phases etc.) at 300bps.

The 300bps modulated signals received via the telephone line L1 and L2 of the NCU are sent from pin R to Pin RXA1 of the modem. After demodulation by the modem, the demodulated digital signals are sent to the IOGA4 (CPU) via the data bus from the modem. The data is read and decoded by the IOGA4 (CPU) and written into the DRAM. The written data is interpreted according to bit assigment of the binary procedural signals in the ITU recommendations. The successive modes of communication (for example, line density,encoding scheme, etc.) are determind.

### (6) Report Printing

Figure A2.6 shows the report printing signal route.

This signal route describes the printing route of character data used to print Activity Report, Message Confirmation Report, etc.

The report data is read into DRAM in the sequence the contents of data stored in the FLASH memory in advance under the control of CPU. The contents of data is edited on the DRAM. The data is read out from the DRAM and sent to IOGA4. The data is converted into a serial data by the picture control of IOGA4 and transferred to the LED print head for printing as HDATA 0.

### (7) Memory Transmission

This signal route describes the memory transmission used in broadcast mode, delayed broadcast mode, etc.

The stored encoded data undergoes buffering, passes through IOGA4 (CPU), MODEM and NCU and then sent out to the telephone line.

### (8) Memory Reception

This signal route describes the memory reception used in no-paper mode, no-toner reception, confidential mode, etc.

The encoded data received by the same route of (3) G3 receive mode undergoes the picture data processing and stored into memory (DRAM) as such. In case of printing, When the data for one page has been stored in the memory (DRAM), the data is read out from the memory and sent to IOGA4 (CPU). The printed data is converted into a serial data by the printer control of IOGA4 (CPU) and transferred to the LED print head for printing as HDATA 0.

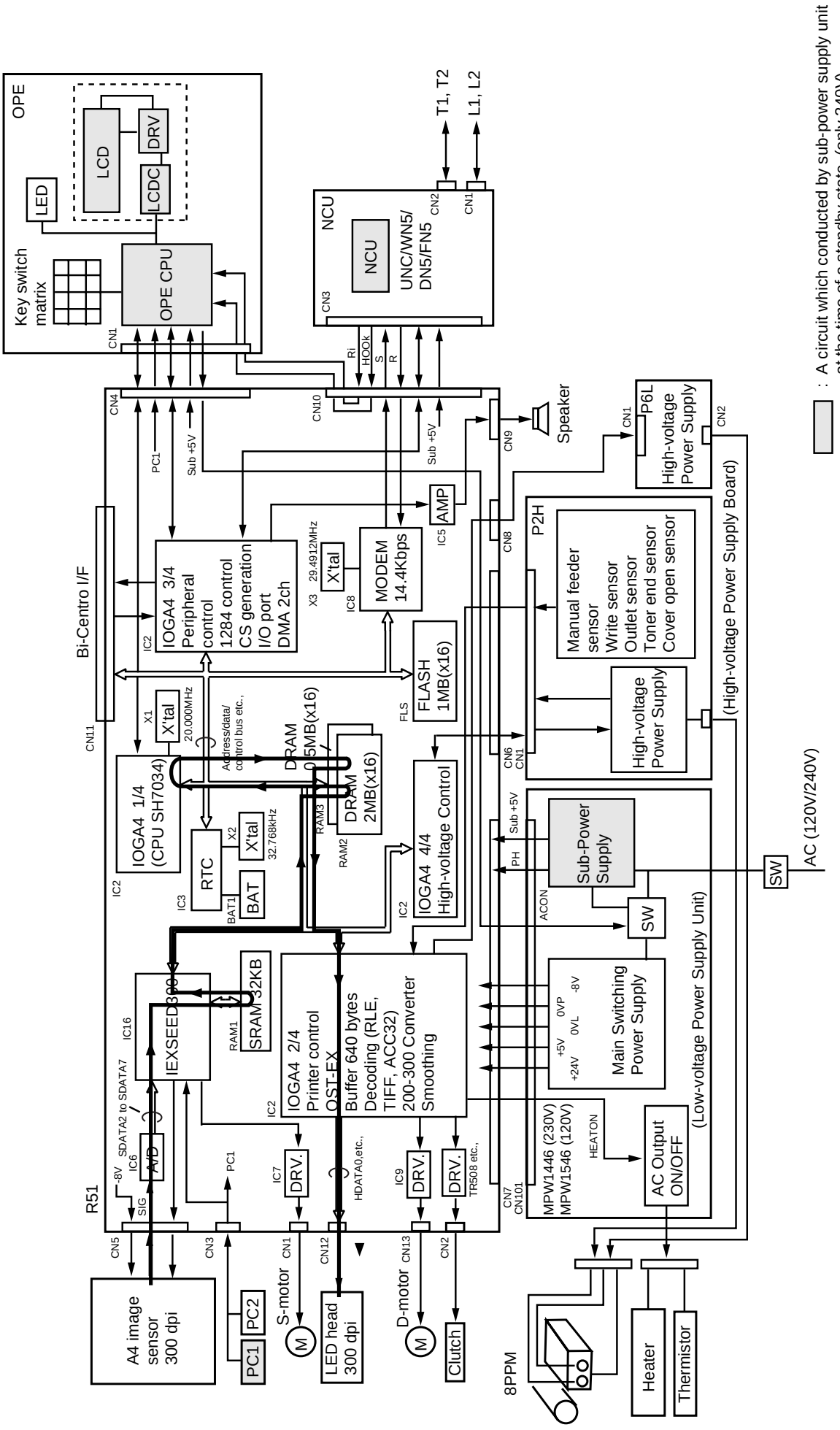



**Figure A2.1 Copy Picture Signal**

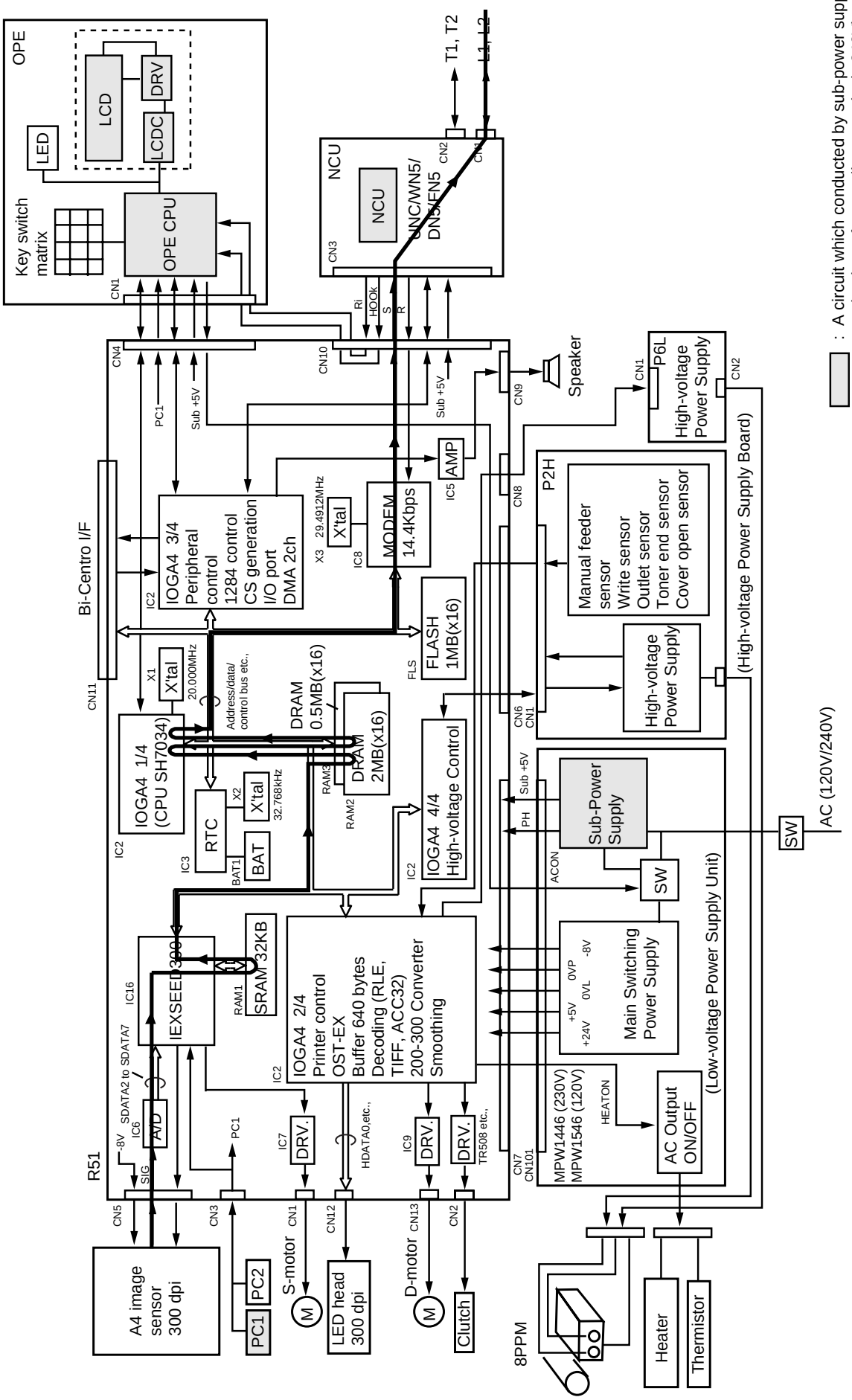
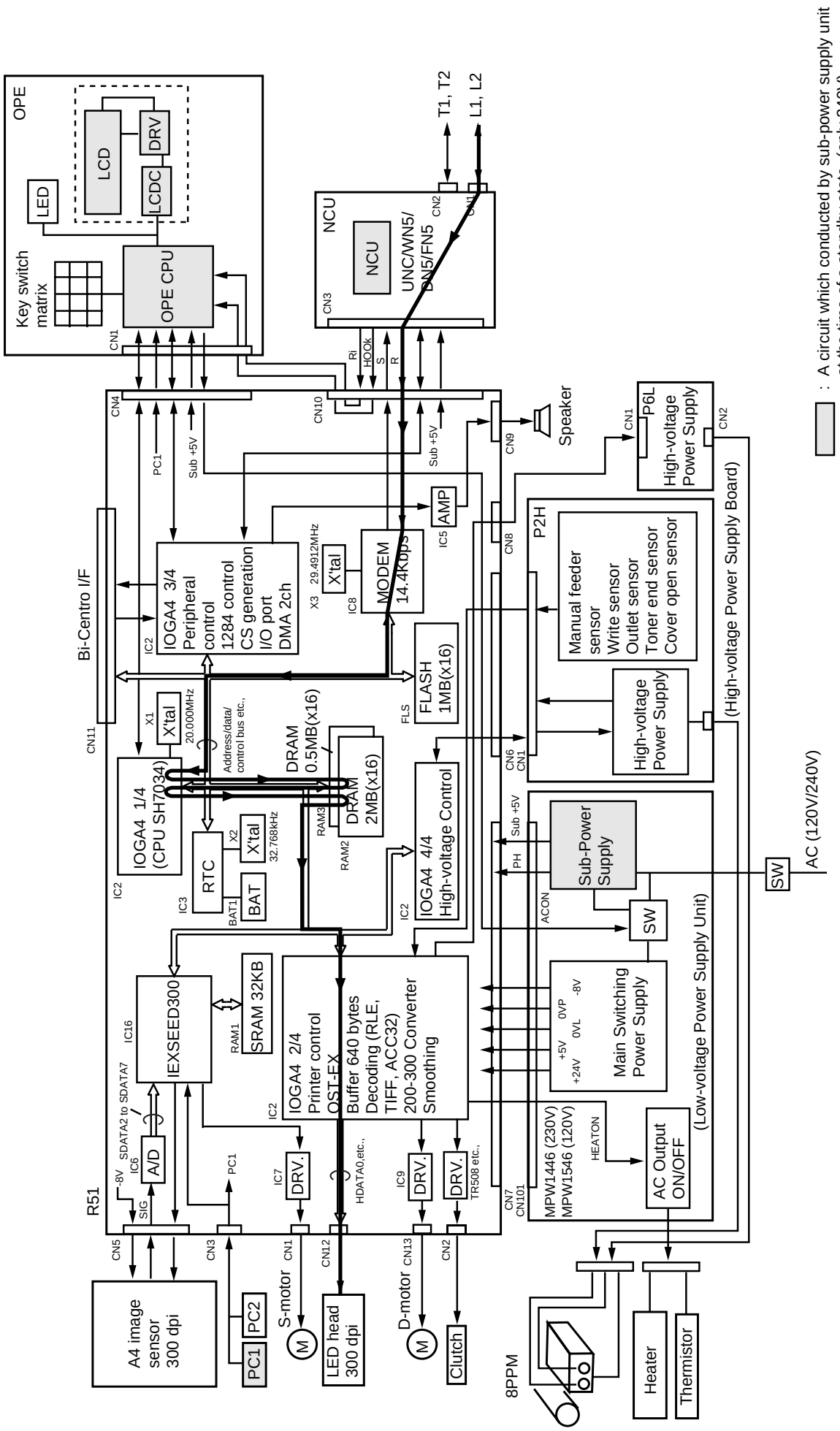



**Figure A2.2 G3 Send Picture Signal**




: A circuit which conducted by sub-power supply unit at the time of a standby state. (only 240V)

**Figure A2.3 G3 Receive Picture Signal**

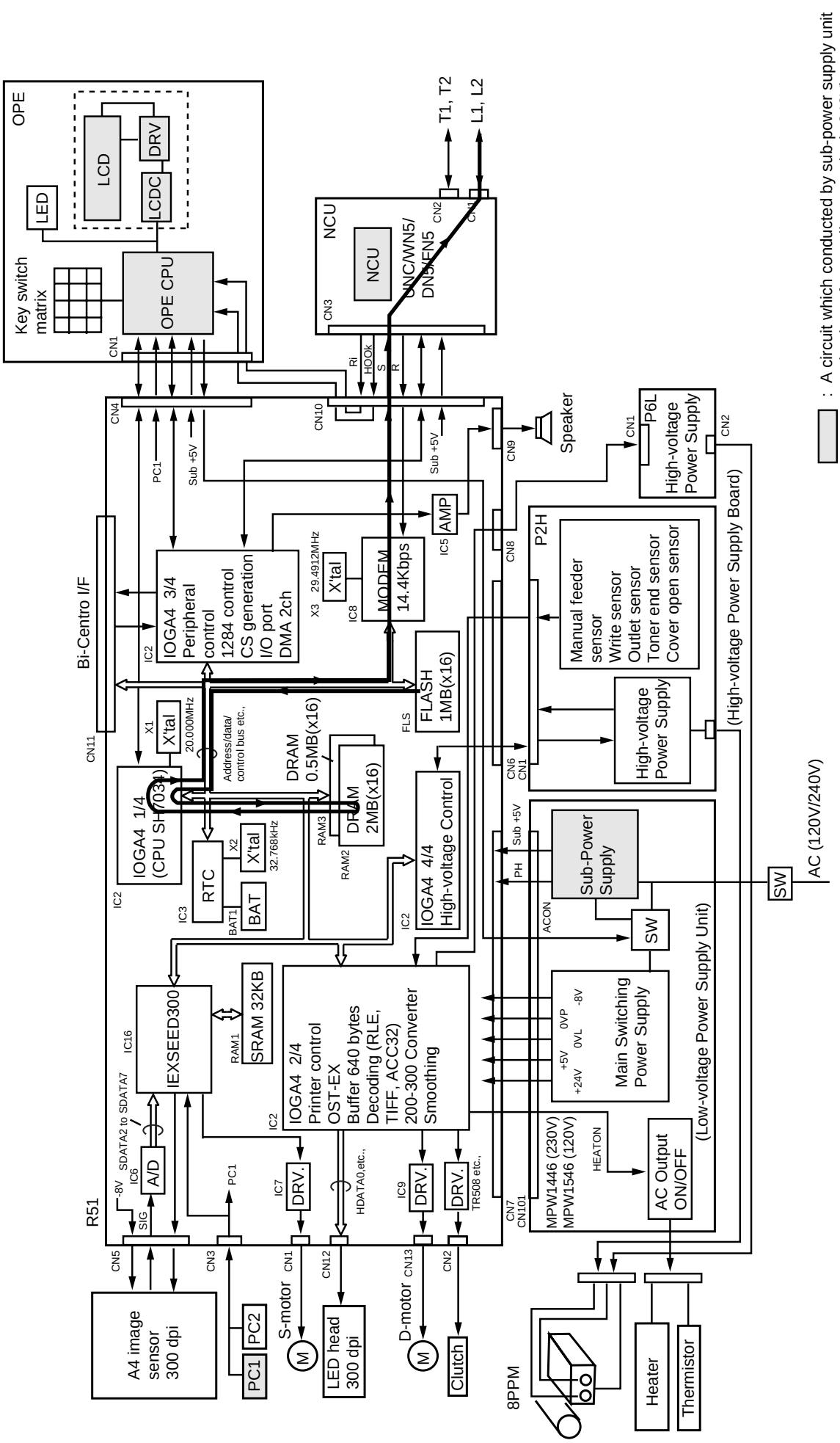



**Figure A2.4 300 dps Send Signal**

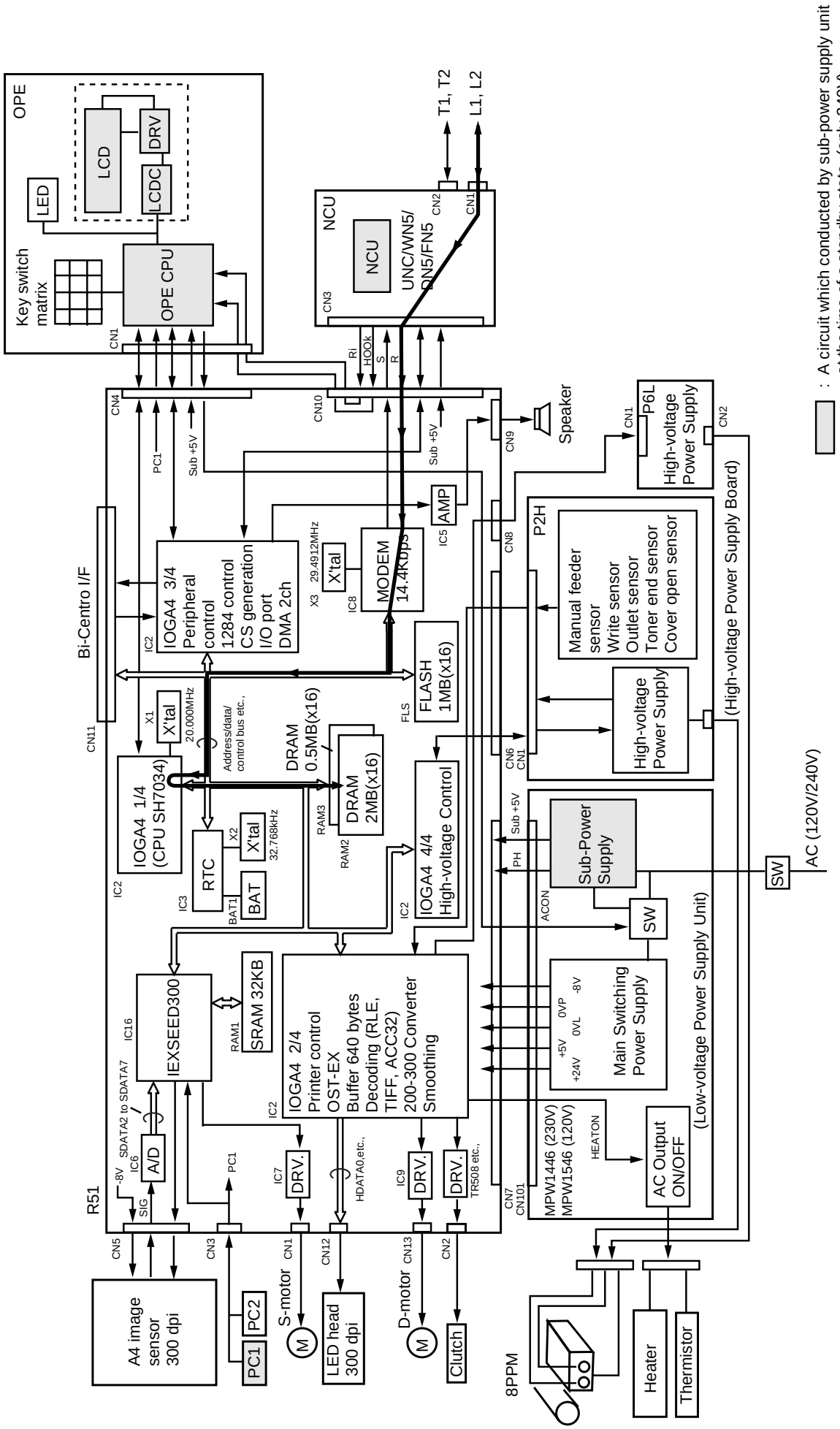



**Figure A2.5 300 bps Receive Signal**

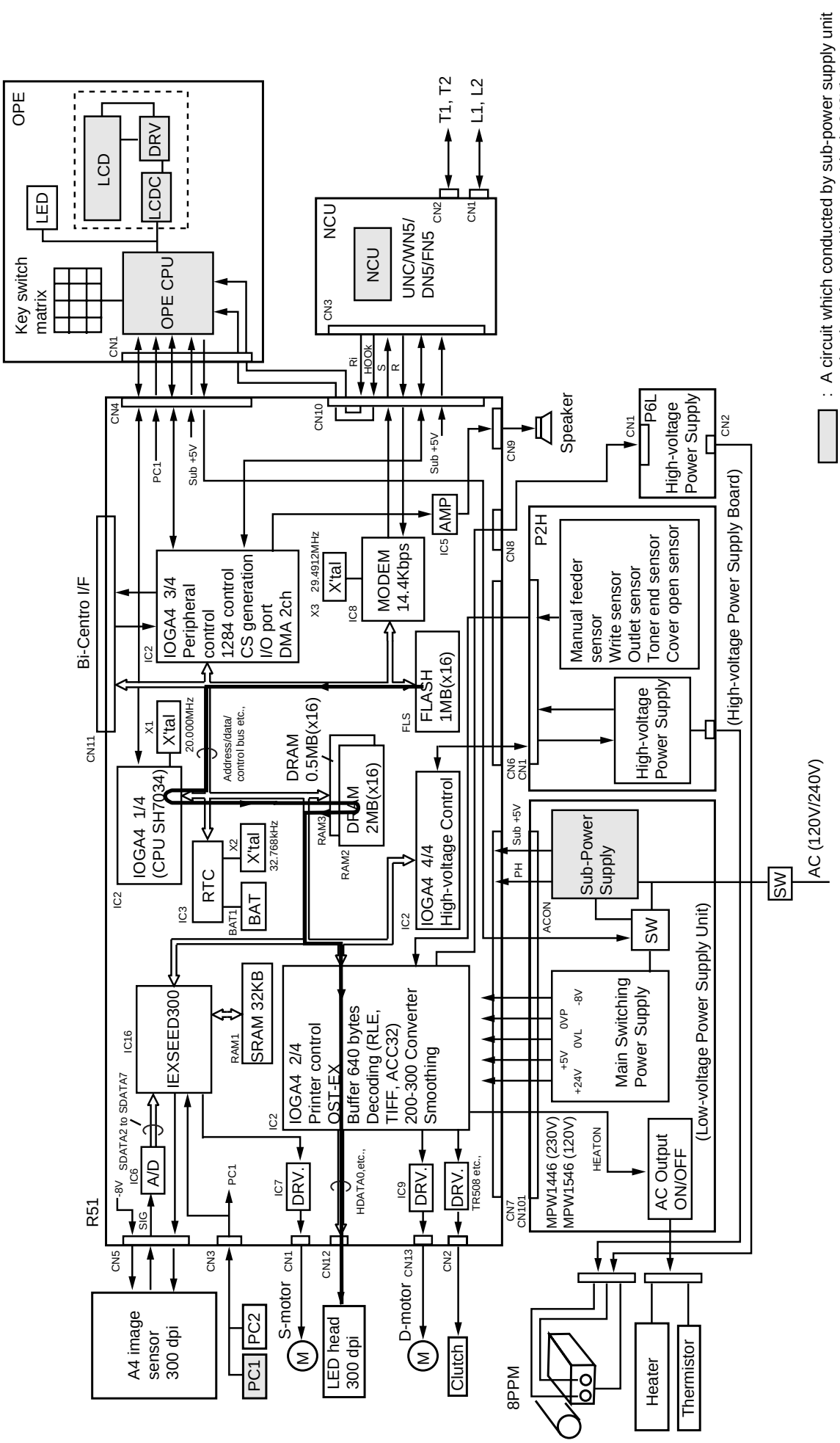



**Figure A2.6 Report Print Signal**

## A3.1 R51 Circuit Diagram

A3.1.1 R51 Circuit Diagram (Page 1/12)

1. Block diagram

The circuit diagram shown on page 1/12 consists of an input/output gate array IC2 (IOGA4), crystal oscillator circuit and reset signal generator.
Figure A3.1.1 shown the block diagram of IC2 (IOGA4) and the peripheral circuits.

2. Function

1) IOGA4 is newly developed LSI for scanning, printing control and provided with a built-in CPU.
- IOGA4 contains the following functions:
• Scanning sensor control
• Various image data processing control for scanning data
• Strobe signals control for LED head
• Smoothing control for printing data
• Interface of the peripheral LSI

- CPU
CPU controls the following functions in addition to the basic processor.
• DMA (Direct Memory Access) control
• Interrupt procedure control
• A/D converter
• Bus state control
• Programmable pattern control
• 16 bit integrated timer pulse unit (ITU)
• Timing pattern control (TPC)
• Serial communication interface (SCT)

2) Crystal oscillator circuit
X1 is 20MHz crystal oscillator. The output wave is fed to the IOGA4 (CPU) through pin 14 and 15. CLK (20MHz) signal output from pin 94 is used as the system clock.

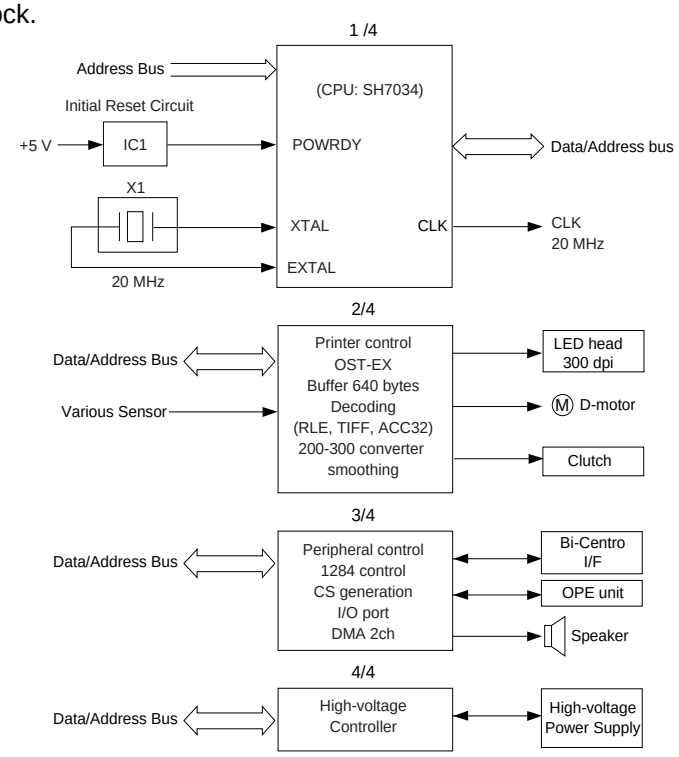



**Figure A3.1.1 Related Signals of IOGA4**

## A3.1.2 R51 Circuit Diagram (Page 2/12)

### 1. Block diagram

The circuit diagram shown on page 2/12 consists of Flash memory, DRAM, Real time clock IC and Back up battery circuit.

Figure A3.1.2 shows the block diagram of Flash memory, DRAM and Real time clock.

### 2. Function

#### 1) Flash memory (FLS)

Flash memory (electrically erasable and programmable device) is used for the main software program, which is stored in EP-ROM of the current OKIFAX. Other than the function of EP-ROM, Flash memory is also used for the user data area instead of SRAM chips.

- 1M Byte Flash memory x 1 (FLS)
  Used for work area, report recording etc.

#### 2) DRAM

RAM2: 2MB (x16) and RAM3: 0.5MB (x16)

- Used as follows:
  Picture memory for the ECM send/receive mode.
  Picture memory for the memory transmission mode.
  Picture memory for the retransmission mode.
  Picture memory for the reception in memory.
  Editing for report printing.

#### 3) Back-up battery circuit

The non-rechargable lithium battery supplies voltage to a real-time clock IC at AC main interruption.

#### 4) Real-time clock IC (IC3)

IC3 is a real-time clock IC used as a timepiece to display the data and time in year, month, day, hour, minute, and second units. Its input/output signals are the 4-bit data bus (D0 - D3), 4-bit address bus (A1 - A4) and the control signals, RTCCS, MDMRD-N and MDWR-N which perform a CPU-controlled read operation (M/D/Y H:M, Data read) and write operation (M/D/Y H:M, Data setting).

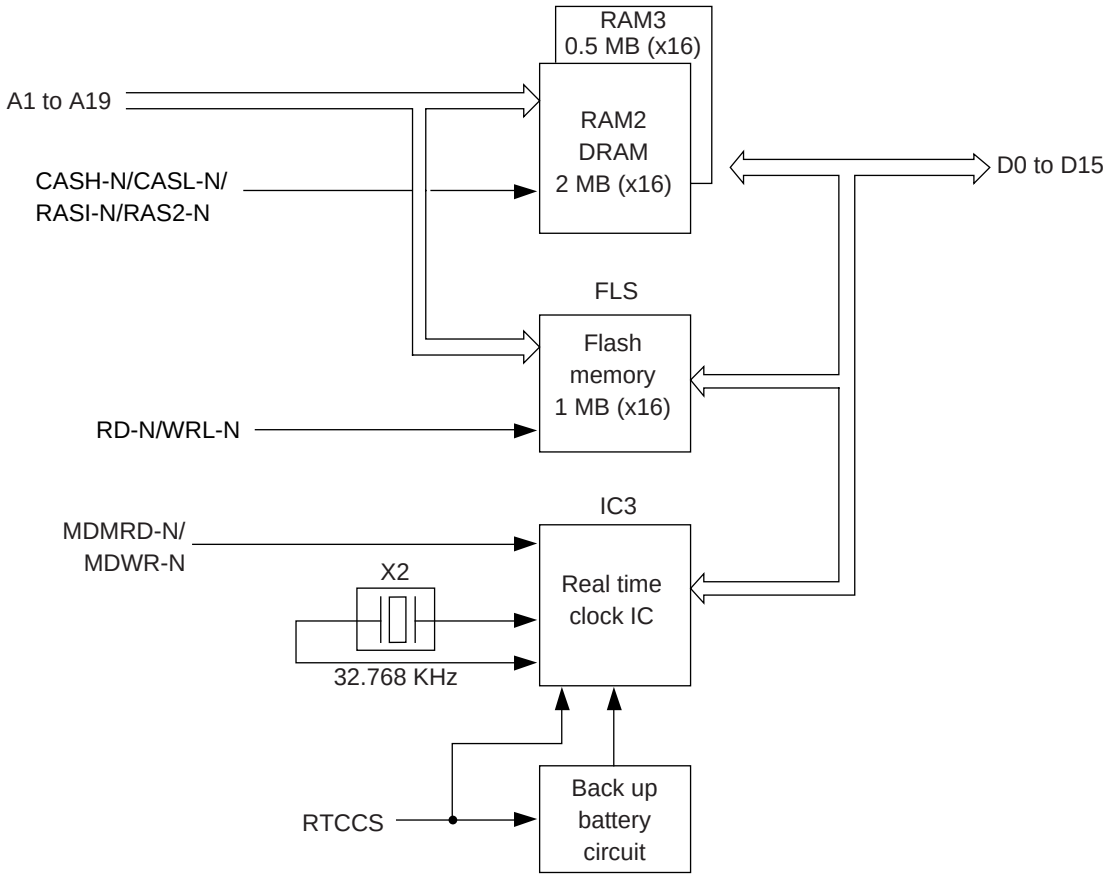



**Figure A3.1.2 Block Diagram of DRAM/Flash Memory and Real-time Clock IC**

A3.1.3 R51 Circuit Diagram (Page 3/12)

1. Block diagram

The audio monitor circuit on page 3/12 that consists of IC11 (analog switch IC) and IC5 (amplifier) generates the following audio monitor.

- Line monitoring
- Buzzer signals

Figure A3.1.3 shows the block diagram of audio monitor circuit.

2. Function

1) Line monitoring

Send and receive signals are input from the transformer on the NCU board to this circuit as a R signal and the signal power is input to the IC11. The IC11 adjusts the monitor volume by MONC0, MONC1 and MONC2 signal under the control of IOGA4. Output (high and low) from IC11 passes through the amplifier and is fed to the speaker as a SP signal.

* MONC0/MONC1/MONC2 signal: Volume control signal.

Note: In case of transmission mode, the monitor will be available during dialing, but the monitor will be switched off automatically after the elapse of specified time (about 5 sec).

2) Buzzer control

Alarm and other signals are input from IOGA4 to this circuit as BZ signals. The various buzzer signals are sounded under the control of IOGA4 (CPU).

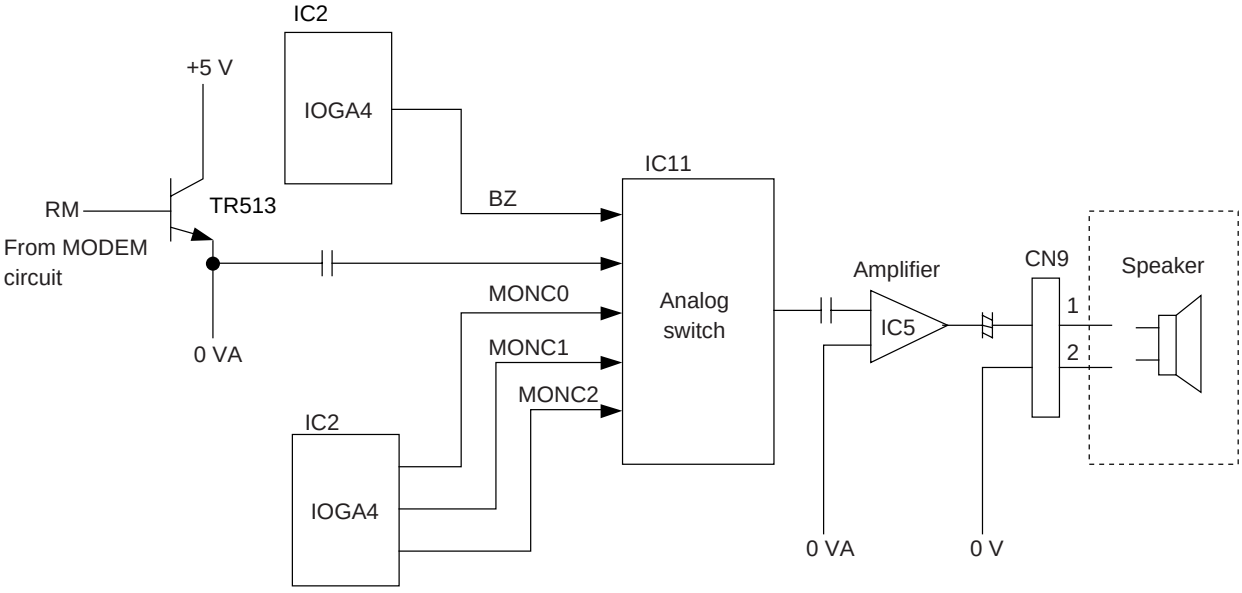



**Figure A3.1.3 Block Diagram of Audio Monitor Circuit**

## A3.1.4 R51 Circuit Diagram (Page 4/12)

### 1. Block diagram

The circuit diagram shown on page 4/12 consists of the following functions:

- IC6 (A/D converter)
- Connector CN5 that provides an interface between R51 board and CIS (contact image sensor).

Figure A3.1.4 shows the related signals and block diagram of CIS.

### 2. Function

One-line picture data is read in the sequence from the scanning unit (CIS) as SIG signal (analog data) to A/D converter (analog/digital converter) of IC6. After conversion from analog data to 6-bit digital signal (SDT2 - SDT7) under the control of IC6, this picture data is sent to IEXSEED300 (Scanning control LSI) of IC16. Here, the picture data undergoes various kinds of picture processings.

Sensor interface signal output from IOGA4

- LEDON : LED on/off control signal
- SNSCLK : Scanning sensor drive clock (1.25 MHz)
- MISP : Scanning synchronous signal (2.5 msec)
- ADCLK : Sampling clock for A/D converter (1.25 MHz)

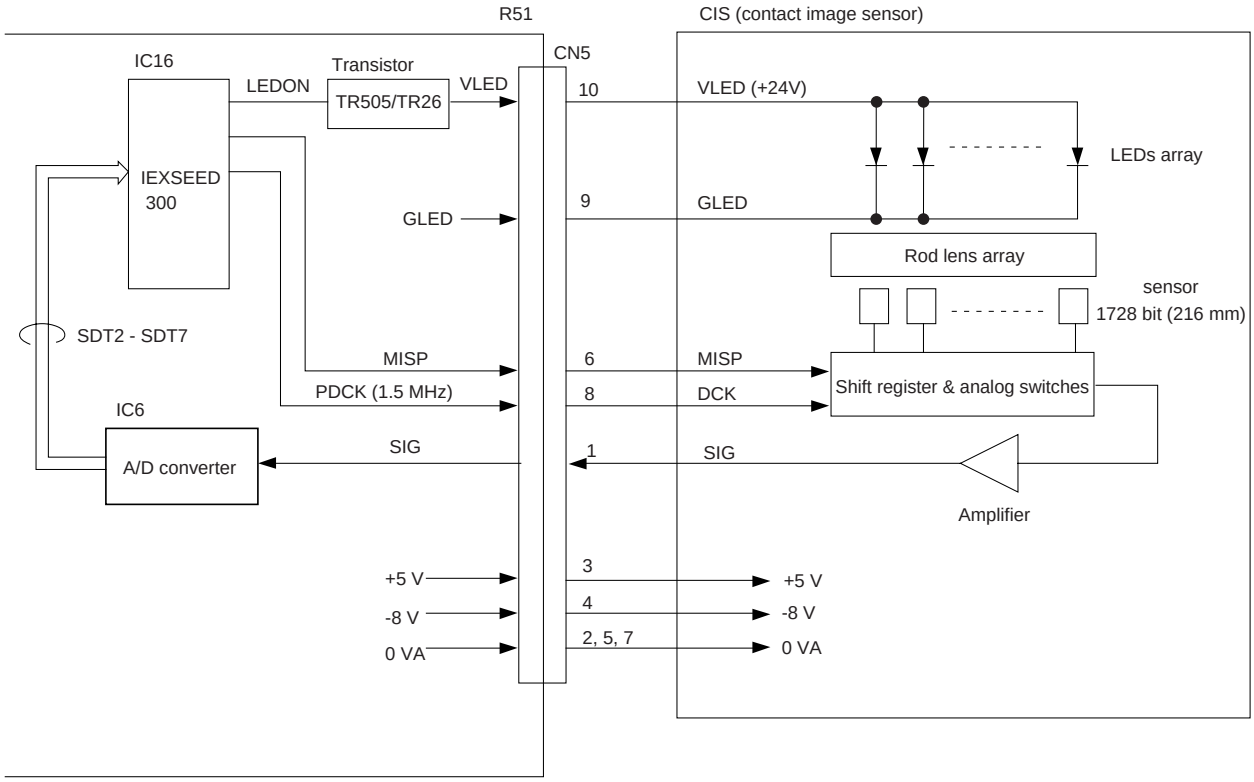



**Figure A3.1.4 Related Signals and Block Diagram of CIS (contact image sensor)**

## A3.1.5 R51 Circuit Diagram (Page 5/12)

### 1. Block diagram

The circuit diagram shown on page 5/12 consists of Modem (14.4 kbps).

Modem consists the following functions:

- Modulation/demodulation
  Modulation type:
  1) ITU-T Rec. V17 (14400/12000/9600/7200 bps) for G3 picture data.
  2) ITU-T Rec. V29 (9600/7200 bps) for G3 picture data.
  3) ITU-T Rec. V27 ter (4800/2400 bps) for G3 picture data.
  4) ITU-T Rec. V21 channel 2 (300 bps) for binary signals defined in ITU-T Rec. T.30.
- Automatic adaptive equalizer for G3 receive data with 300 bps data excluded.
- Generation of signal tones
- PB tone (multi-frequency tone) generation
- Detection of single tones
- D/A converter for send data (TX)
- A/D converter for receive data (RX)
- Amplitude equalizer for RX
- Selectable attenuation for TX
- Automatic gain control

Figure A3.1.5 shows the related signals of Modem.

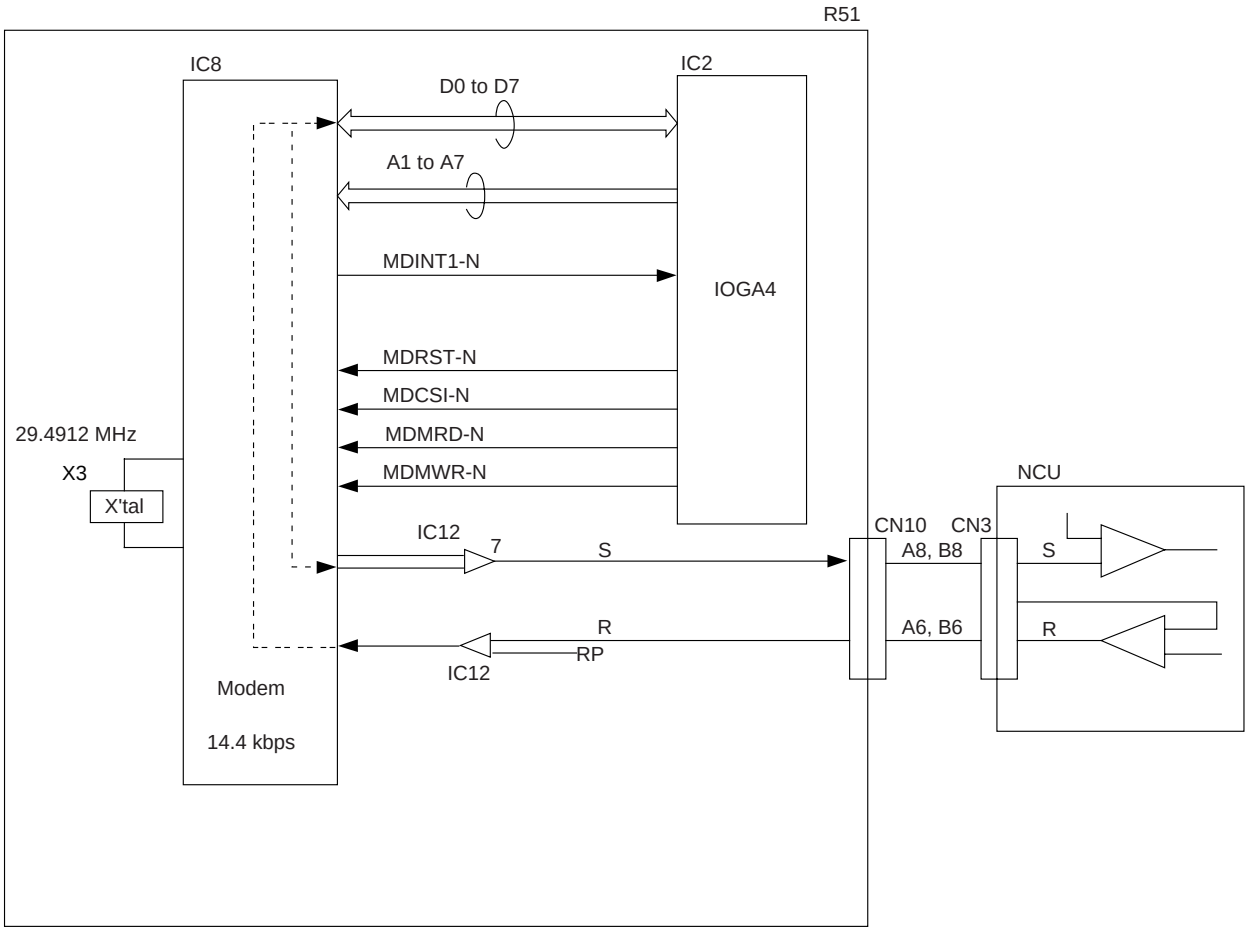



**Figure A3.1.5 Related Signals of Modem**

A3.1.6 R51 Circuit Diagram (Page 6/12)

1. Block diagram

The circuit diagram shown on page 6/12 consists of connector CN12 that provides an interface between R51 board and LED print head.

Figure A3.1.6 shows the related signals and block diagram of LED print head.

2. Function

Data of 1664 LEDs on the LED print head is loaded into the shift registers by the HCLCK (4MHz or 6.7 MHz) signal. After the 1664 bit (208 mm) data is loaded in the shift registers, it is then loaded in the latch circuit by the HLATCH signal. The turning -on and off of the LEDs are controlled by STRB1-N to STRB4-N signals.

LED head interface signals output from IOGA4

- HDATA 0 : Print data i.e., data to be printed
- HCLCK : Transfer clock for print data (4.0 MHz or 6.7 MHz)
- HLATCH : Latch signal for print data
- STRB1-N to STRB4-N : LED head strobe signals

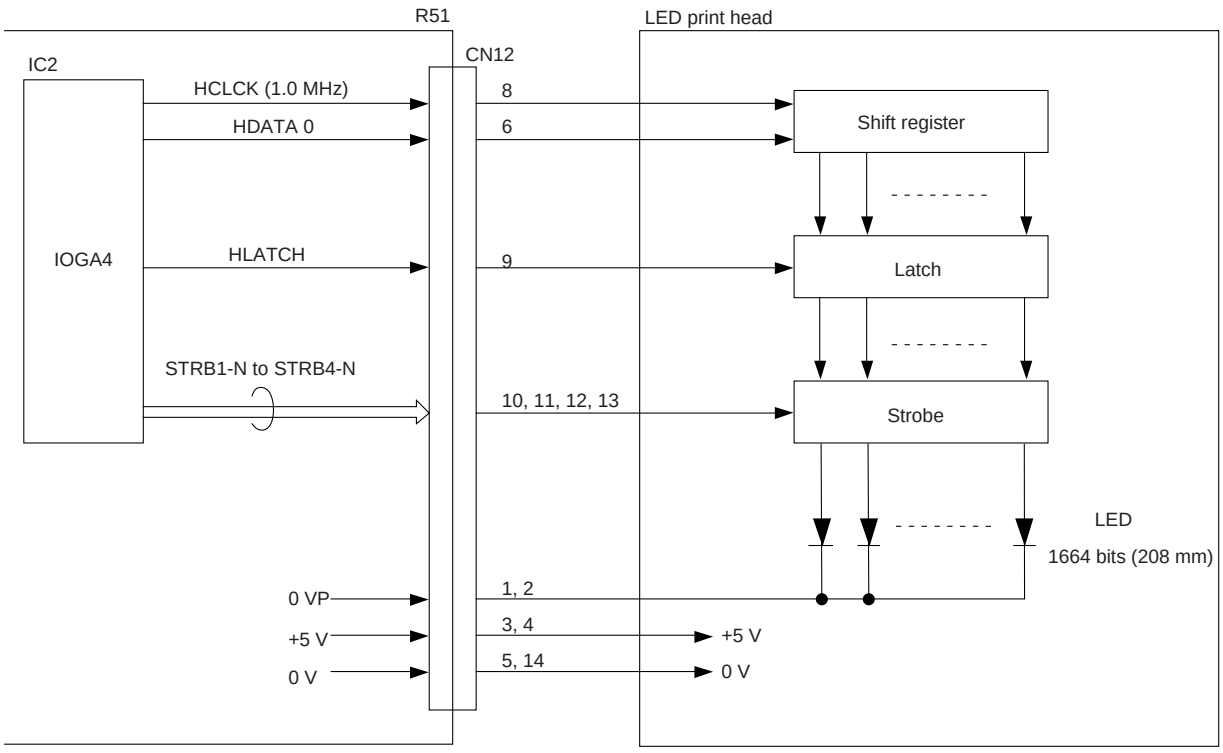



**Figure A3.1.6 Related Signals and Block Diagram of LED Head**

## A3.1.7 R51 Circuit Diagram (Page 7/12)

### 1. Block diagram

The circuit diagram shown on page 8/12 consists of the following connectors:
- Connector CN10 that provides an interface between R51 board and NCU board.
- Connector CN3 that provides an interface between R51 board and external electro-mechanical conponents (PC1 and PC2).
- Connector CN4 that provides an interface between R44 board and OPE (O4W) unit.

Figure A3.1.7 shows an interface between R51 board and NCU board.
Figure A3.1.8 shows an interface between R51 board and OPE unit.
Figure A3.1.9 shows the related signals of PC1 and PC2.

### 2. Function

#### 1) External status supervising interface (PC1/PC2)

External status is detected by the photocouplers (PC1/PC2) in the mechanism and the signal is output to the input port of CPU via this interface circuit.
- PC1: Presence of document on hopper.
  When sub-power supply is applied to the fax machine, this signal is output to OPE unit which will control the main-power supply.
- PC2: Presence of document at scanning position.

### 3. Others

NCU interface signal
- CML : Line seizure control signal
- DP : Dial pulse control signal
- SR : Control signal for connection between LINE and TEL terminals
- MUTE : Control signal for pulse dial improvement and bell shunt relay
- PP : Relay control signal for special service code detection at parallel pickup or remote reception
- PBXE : Control signal for connecting one of LINE terminal to the PBXE terminal
- OH2-N : Detection of off-hook of terminal connected to TEL-1 or TEL-2
- OH1-N : Output upon circuit current detection after fax line seizure
- RP : Receiving sensitivity determination terminal
- RI : Ringing detection signal
- S : Send signal (picture data/protocol/tonal signals/PB tone etc.)
- R : Received signal (picture data/protocol/tonal signals etc.)

OPE interface signals
- TXDOPE : This signal transmits sequencially the contents of each data of TXD (LED on/off information, etc.) to OPE in serial data from CPU.
- RXDOPE : This signal transmits sequencially the contents of each data of RXD (key code information, etc.) to CPU in serial data from OPE.
- OPECHK : Use to monitor the operation of the OPE unit.
- OPERST : Reset signal for OPE unit

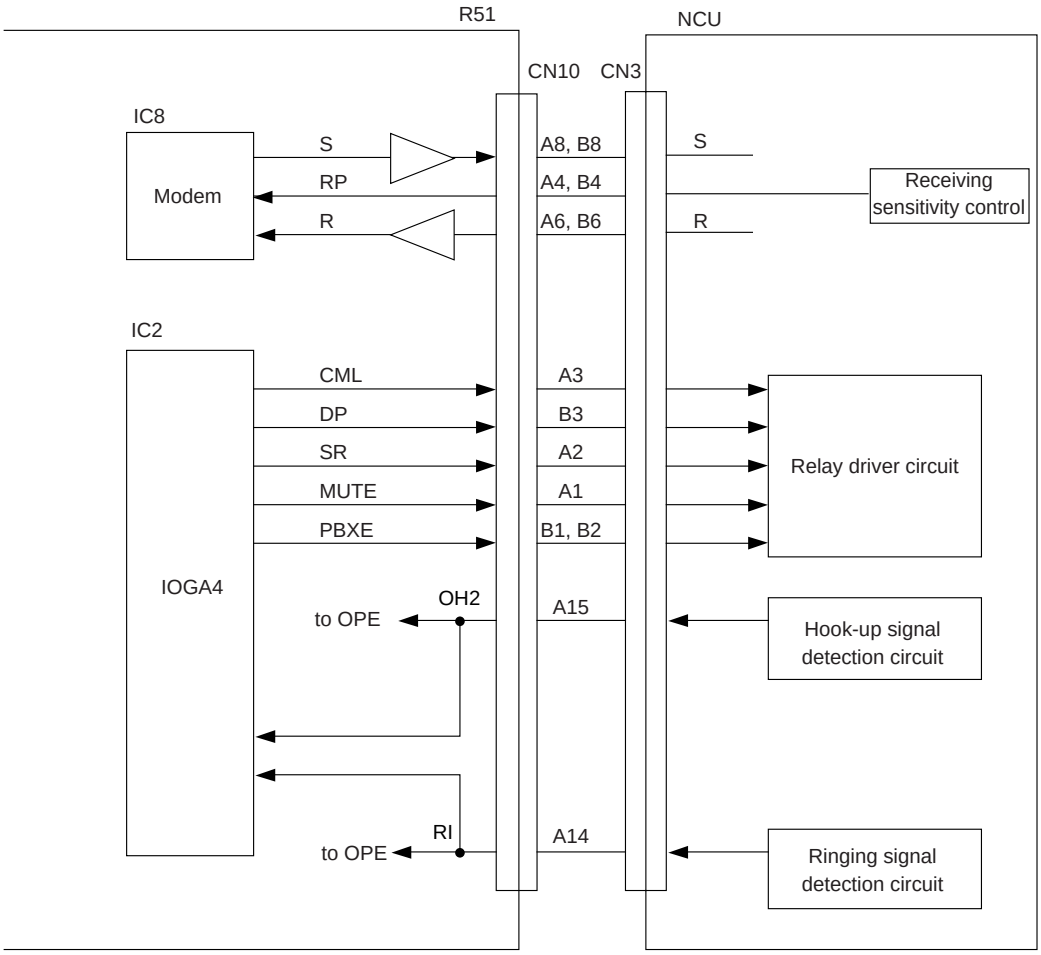



**Figure A3.1.7 Interface between R51 Board and NCU Board**

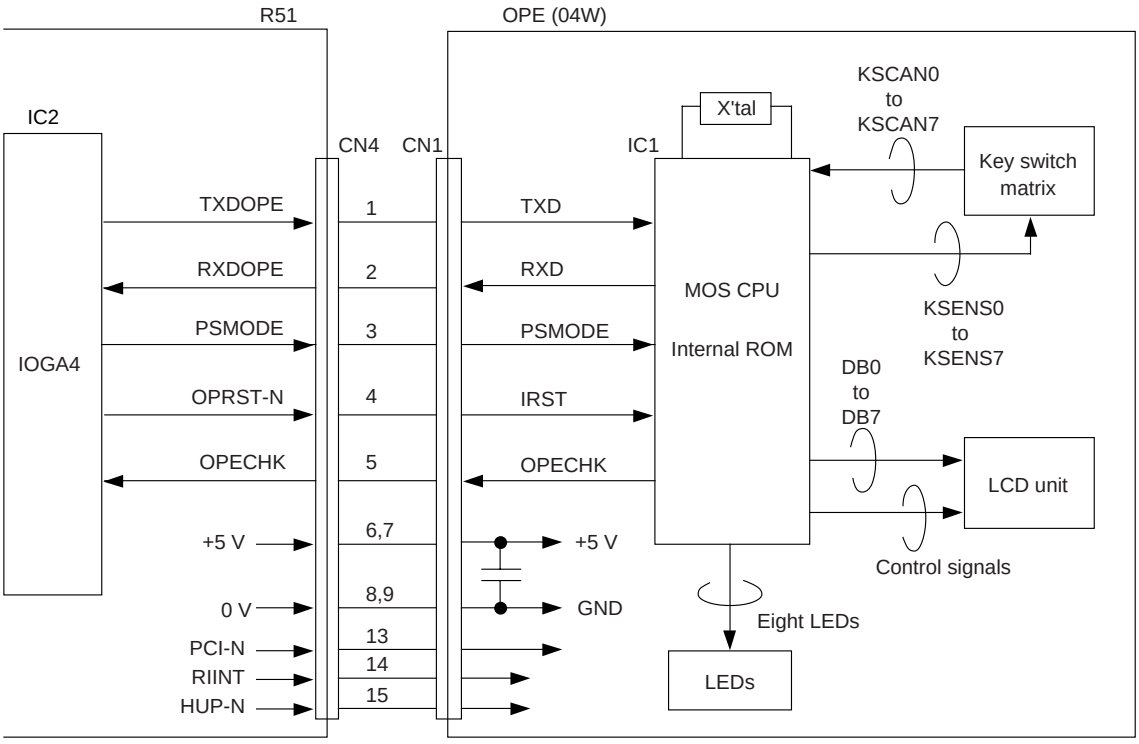



**Figure A3.1.8 Interface between R51 Board and OPE (operation unit)**

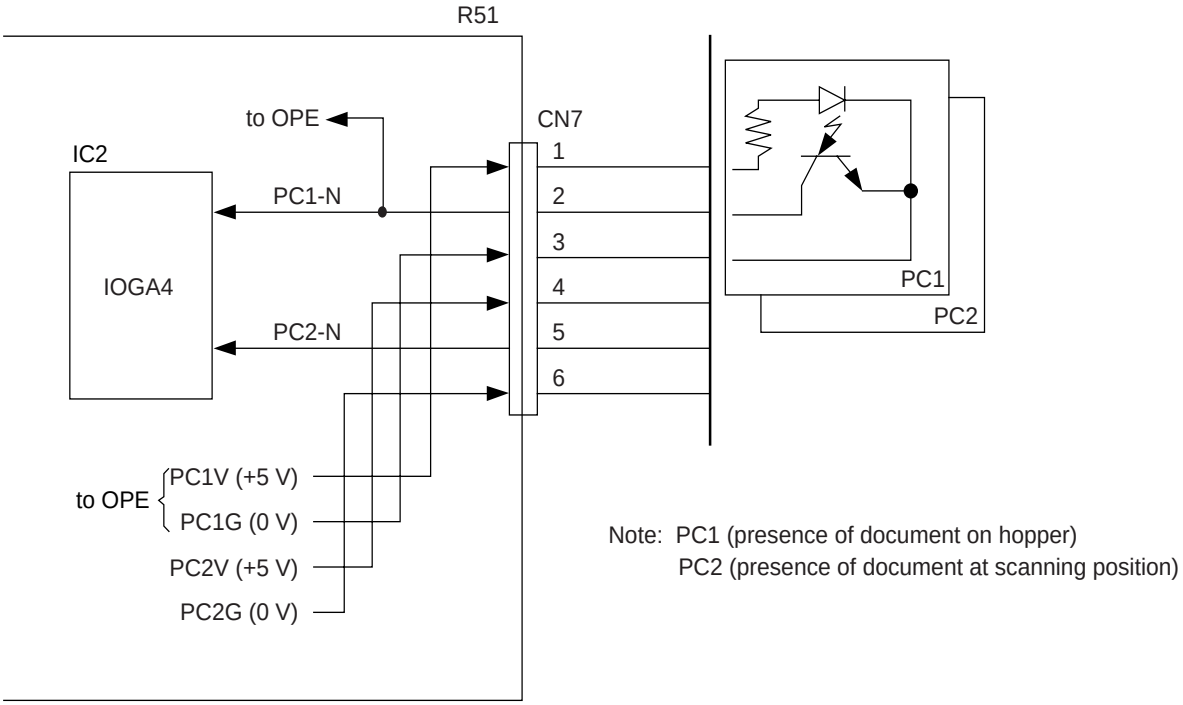



**Figure A3.1.9 Related Signals of PC1/PC2**

A3.1.8 R51 Circuit Diagram (Page 8/12)

1. Block diagram

The circuit diagram shown on page 8/12 consists of the following functions and connectors:

- IC9 (Drum motor driver)
- Connector CN13 that provides an interface between R51 board and the drum motor.

Figure A3.1.11 shows the related signals of the drum motor and clutch.

2. Function

1) Drum motor control

This drum motor is driven by the motor driver IC9. It is two-phase excited and bipolar-driven according to the DMPH1, DMPH2 and DMON1-N signals that are generated from the IOGAA (CPU). This drum motor rotates the image drum.

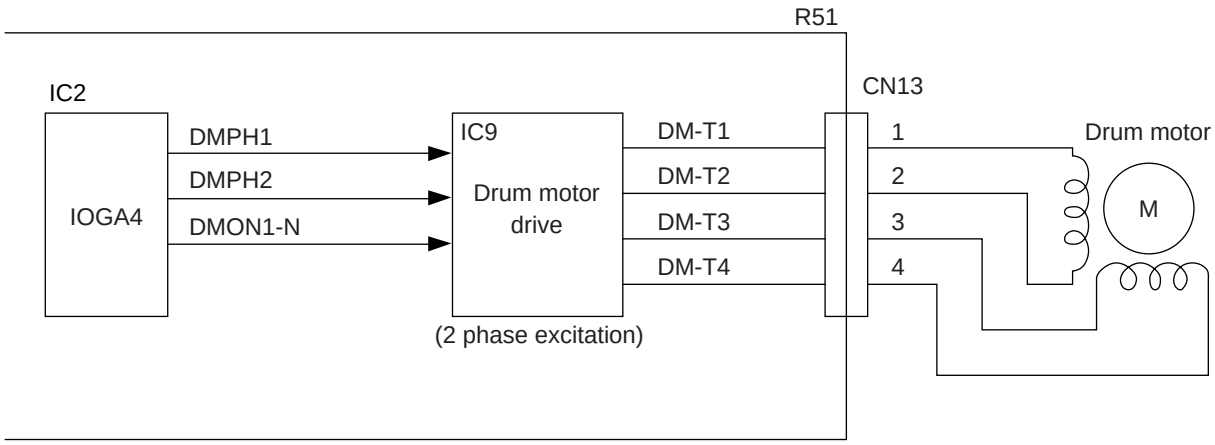



**Figure A3.1.10 Related Signals of Drum Motor**

## A3.1.9 R51 Circuit Diagram (Page 9/12)

### 1. Block diagram

The circuit diagram shown on page 9/12 consists of the following function and connectors:

- TA1 (Send motor driver)
- TR508/TR507 (Clutch driver)
- Connector CN1 that provides an interface between R51 board and the send motor.
- Connector CN2 that provides an interface between R51 board and the clutch.

Figure A3.1.11 shows the related signals of the send motor and clutch.

### 2. Function

#### 1) Send motor rotation and chopper control

Send motor drive signals are generated by the IEXSEED300 and output to send motor via IC7 (motor drive IC) of this circuit.

Note: The built-in motor control circuit of IEXSEED300 consists of the following blocks:

- Setting of the excitation operation
- Setting of the chopping operation
- Setting of the motor excitating method (1-2/2-1 phase excitation)

##### a) Send motor rotation control

There are several cases of the rotation operation:
Forward rotation for feeding documents.

- Case 1: Feeding document from hopper to the position where one line data is read.
- Case 2: Feeding document while reading.
- Case 3: Feeding document after a page has been read.

##### b) Send motor chopper control

The purpose of chopper control is to reduce the current to the motor by setting the phase signal on and off intermittently when a time lapse exceeding a specific time occurs without a phase update.

#### 2) Clutch

When starting to print, performs the paper supply of recording paper by using this clutch. Clutch is driven by clutch signal generated from IOGA4.

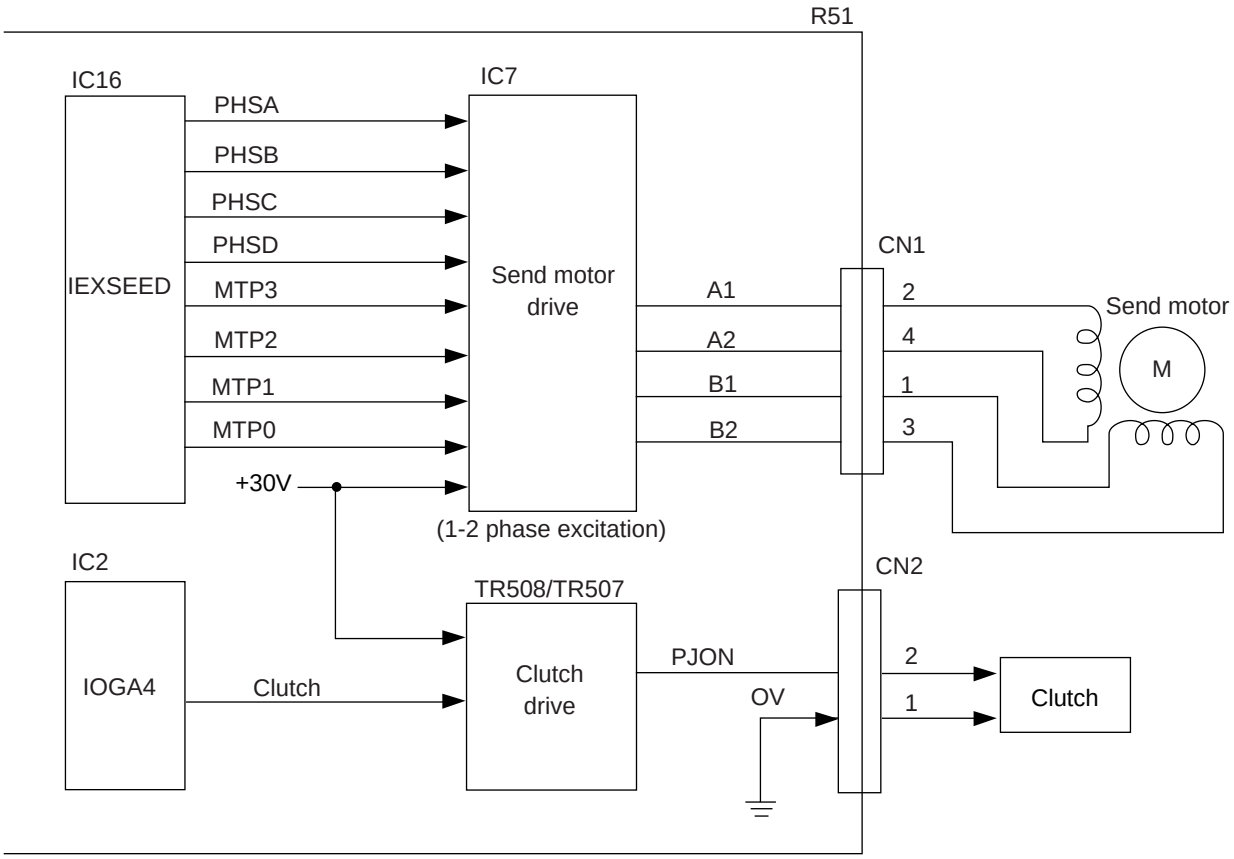



**Figure A3.1.11 Related Signals of Send Motor and Clutch**

### A3.1.10 R51 Circuit Diagram (Page 10/12)

1. Block diagram

The circuit diagram shown on page 10/12 consists of the following connectors:

- Connector CN11 that provides an interface between R51 board and Bi-Centro I/F.

Figure A3.1.12 shows the interface between R51 and Bi-Centro I/F.

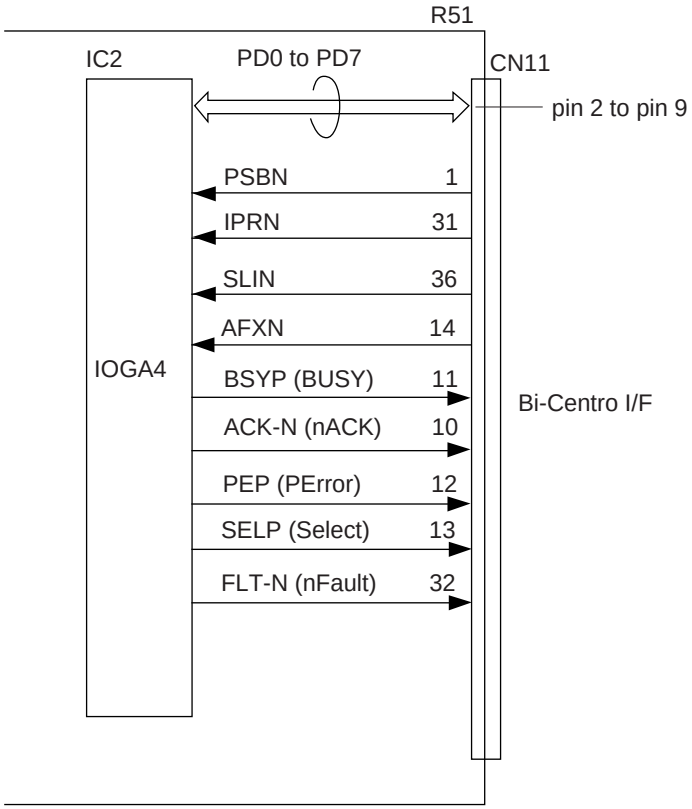



**Figure A3.1.12 Interface between R51 Board and Bi-Centro I/F**

### A3.1.11 R51 Circuit Diagram (Page 11/12)

1. Block diagram

The circuit diagram shown on page 11/12 consists of the following connector:

- Connector CN6 that provides an interface between R51 board and power supply unit (P2H).
- Connector CN7 that provides an interface between R51 board and power supply unit (MPW1446/MPW1546).
- Connector CN8 that provides an interface between R51 board and power supply unit (P6L).

2. Function

1) Sensor and switch control

Five types of sensors are used in the printer as listed below. All of their output enter IOGA4 ports for referring to and processing by the IOGA4 (CPU). Figure A3.1.13 shows sensors and switch control.

- Inlet sensor 1
- Write sensor (To detect the paper top position for printing)
- Outlet sensor
- Toner end sensor
- Cover status switch

The functions of various sensors are described in the following table.

| Sensor Type | Sensor Name | Function |
|---|---|---|
| PSIN-N | Inlet sensor | This photosensor is positioned before the resist roller to detect whether the paper has entered into the printer section. |
| WRSNS-N | Write sensor | Detects the arrival of paper at designated position on the paper transport route inside the printer in order to turn on the light of the LED head.<br>0: Paper exists, 1: Paper does not exist |
| PSOUT-N | Outlet sensor | Located at the exit of the printer to supervise the paper exit operation.<br>0: Paper exists, 1: Paper does not exist |
| TNRSNS-N | Toner sensor | Detects the remaining toner in the toner cartrige.<br>"The length of time of low-toner state within fixed time interval" detects a low-toner state. |
| CVOPN-N | Cover open sensor | Detects whether the cover of the printer section is open or not.<br>0: Cover is open, 1: Cover is close |

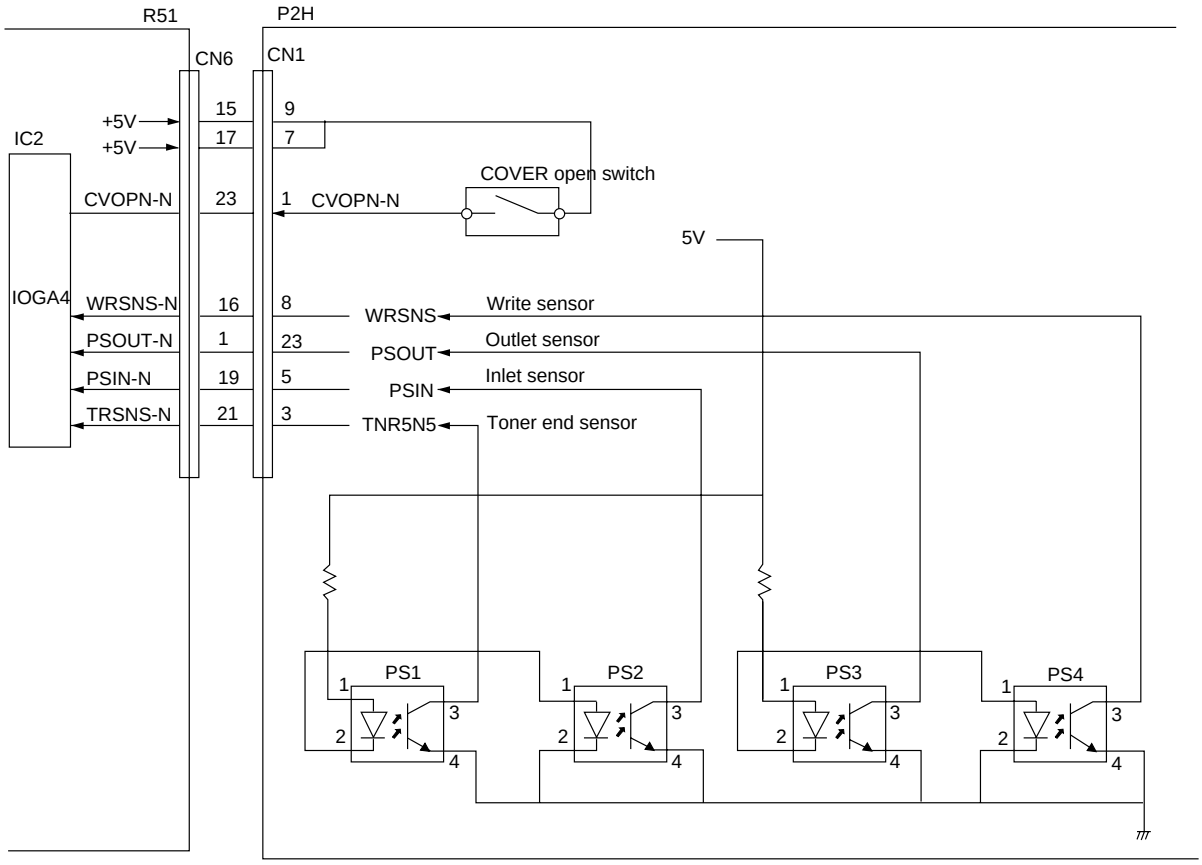



**Figure A3.1.13 Sensor and Switch Control**

2) Fuser unit temperature control

The heater in the fuser unit is controlled by the thermister, IOGA4 keeps the heater roller surface within a prescribed temperature range. The IOGA4 supervises the status of THCHK (A/D converter input section) periodically, turning HEATON signal on and off according to IOGA4 of THCHK status to exercise temperature control. At power on time, the IOGA4 switches the output signal THON from pin 59 (between high and low states) to check for a blown or shorted thermister according to the status of the THCHK signal.
A built-in thermostat in the fuser unit prevents the heater from being overheated in event of failures in the thermister, or temperature control circuit, etc.

Figure A3.1.14 shows the fuser unit temperature control.

Note: Heater control
Temperature of the heater at the time of printing is 150 ˚C to 180 ˚C. This temperature is maintained by controlling the on and off operation of heater according to the input of the thermister converted into analogue-digital (A/D) values by the IOGA4.

2)-1 Heater control

The ACON control signal on the secondary side is transmitted to the primary side via PC4 to turn triac TRA1 for AC voltage supply to the heater.

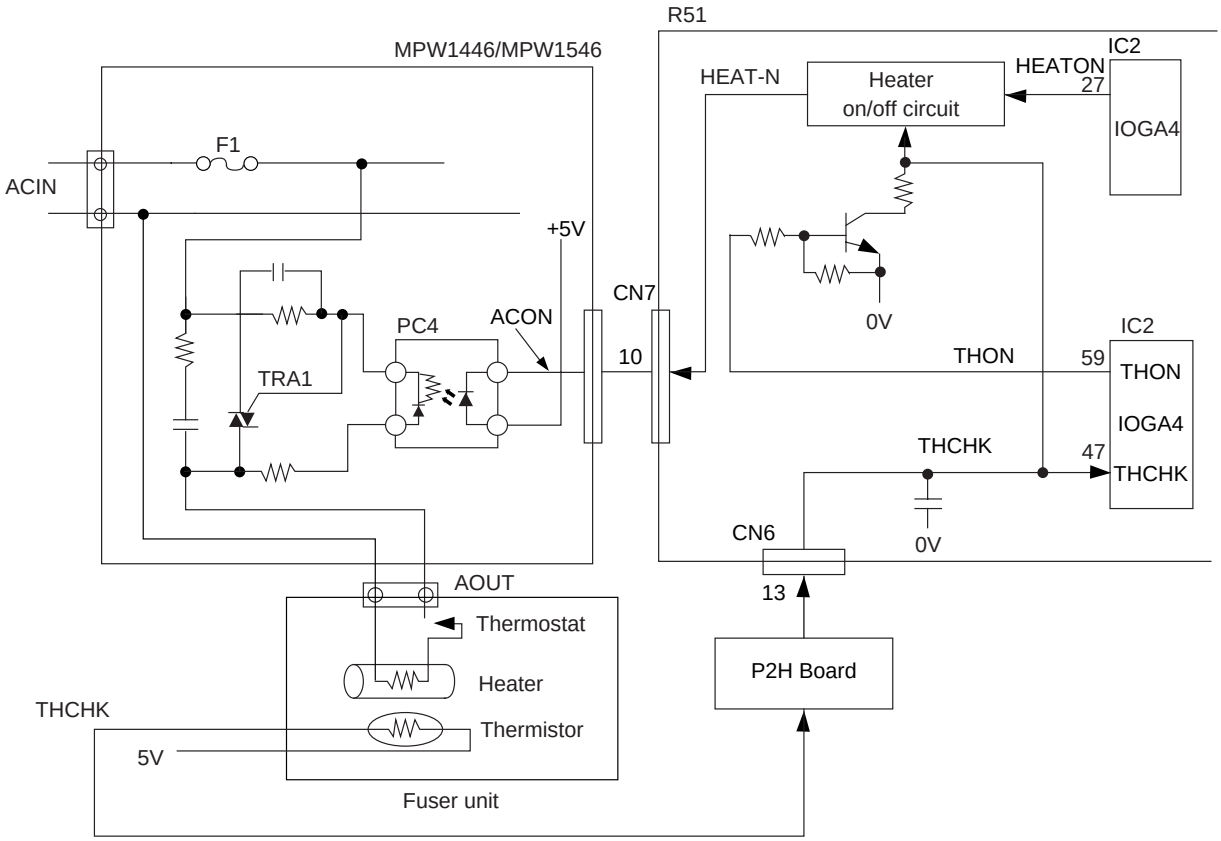



**Figure A3.1.14 Fuser Unit Temperature Control**

3) High-voltage and medium-voltage control

High voltages are activated by IOGA4 and generated by the high-voltage circuit inside the power supply unit. The CH (charge) voltage of about -1.30kV is used for the charge roller. The TR1/TR2 (transfer) voltage of about +3.9kV/-0.75kV is used for the transfer roller.

Medium voltages are activated by IOGA4 and generated by the medium-voltage circuit inside the power supply unit. The SB1/SB2 (toner supply) voltage of about +0V/-450V is used for the toner supply roller. The DB1/DB2 (developing) voltage of about +265V/-265V is used for the developing roller. The CB (cleaning) voltage of about +400V/-1.35kV is used for the cleaning roller.

Figure A3.1.15 shows high/medium voltages control.

* Signals used to control the high/medium-voltages are listed below.

| Signal Name | Description |
|---|---|
| CHON | "1": CH is output. (-1.30kV) |
| DBON1 | "1": + ive polarity voltage of DB/SB is output. (+265V) |
| DBON2 | "1": - ive polarity voltage of DB/SB is output. (-265V) |
| TRON1 | "1": + ive polarity voltage of TR is output. (+3.9kV) |
| TRON2 | "1": - ive polarity voltage of TR is output. (-0.75kV) |
| CB1ON | "1": + ive polarity voltage of CB is output. (+400V) |
| CB2ON | "1": - ive polarity voltage of CB is output. (-1.35kV) |

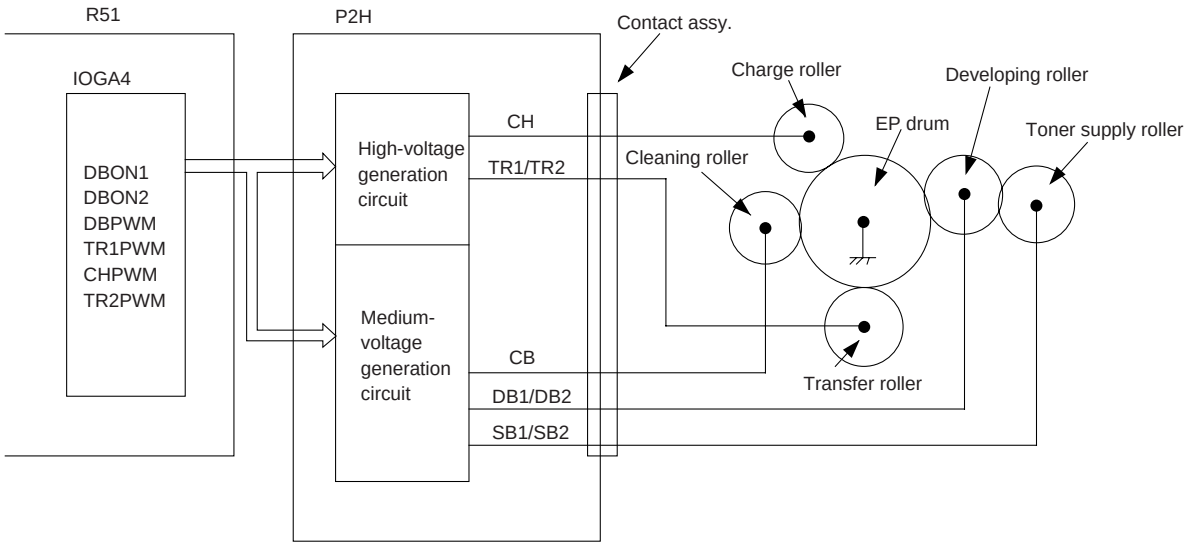



**Figure A3.1.15 High/Medium Voltages Control**

A3.1.12 R51 Circuit Diagram (Page 12/12)

1. Block diagram

The circuit diagram shown on page 12/12 consists of the IEXSEED300 (image processing LSI) of IC16 and SRAM.

Figure A3.1.16 shows the related signals of IEXSEED300.

2. Functions

IEXSEED300 is d eveloped LSI for the image processing.
IEXSEED300 contains the following functions:
- Contact image sensor driver
- Send motor forward rotation/chopping control
- Line buffer control

3. SRAM

32 KByte SRAM x 1 (RAM1)
Stores the dark/light level correction data.
Error diffusion data and image separation data are processed by IEXSEED.

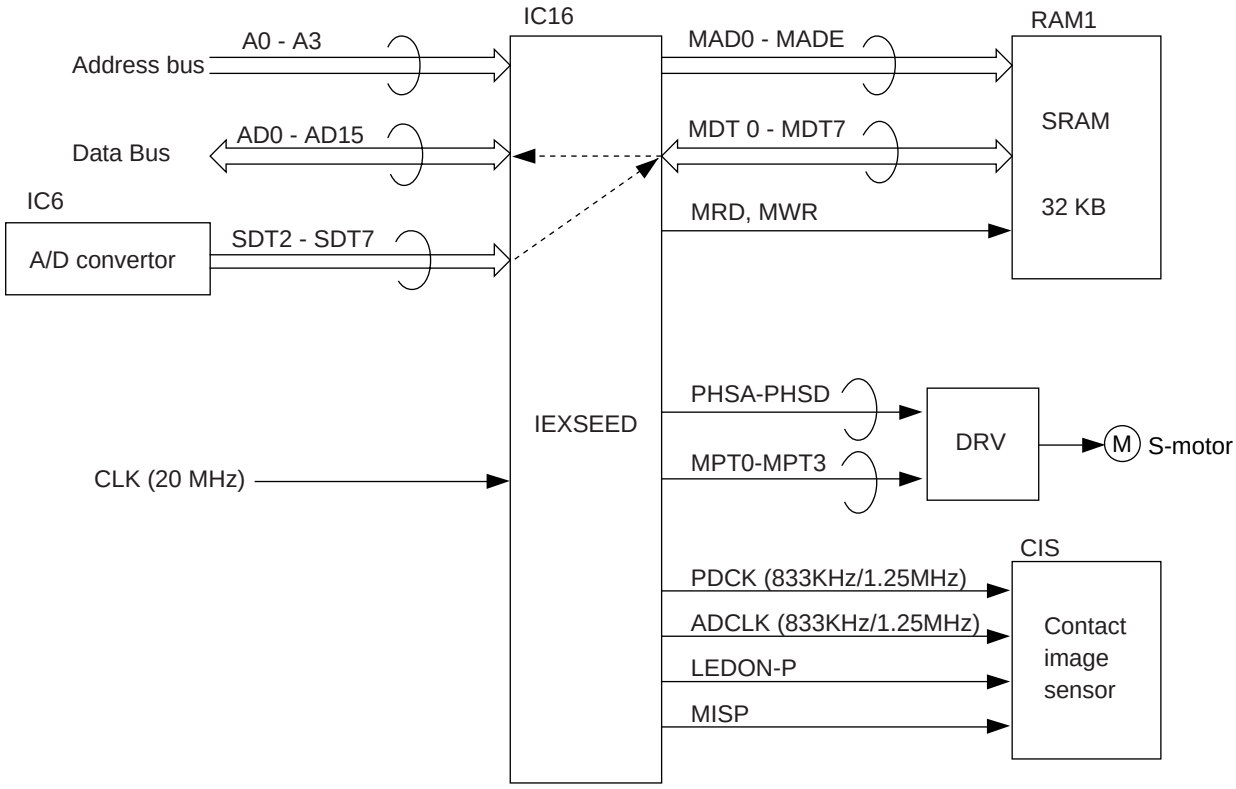



**Figure A3.1.16 Related Signals of IEXSEED**

## A3.2 OPE (04W) Circuit Diagram

1. Block diagram

   Figure A3.2.1 shows a block diagram of OPE (04W).

   The 04W (operation unit) circuit consists of the following blocks:

   1) IC1 (one chip MOS-CPU)

      - Output ports
        Setting LEDs on and off: 8 ports
        Specifies the row during key switch matrix scanning: 8 ports
      - Input ports
        Detect the column whose key is pressed: 8 ports

   2) Key switch matrix (8 rows x 8 columns)

   3) LEDs (8 LEDs)

   4) LCD unit

2. Key switch scanning

   Output ports (KSCAN0 to KSCAN7 signal) corresponding to 8 rows of key matrix are scanned sequentially by the software. In the case 1 is any of output from KSCAN0 to KSCAN7 signal which corresponds to the row 8 in the block diagram, the software reads input port, KSENS0 to KSENS7, and determines which in the row 8 is pressed.

3. LED drives and LEDs

   Eight LEDs (ALARM, PHOTO, LIGHT, etc.) on the control panel are driven by output of IC1 via resistors R1, R4-9 and R11 respectively. An LED lights on when a port output is 1.

4. In case sub-power supply is applied to the fax machine: when PC1-N, HUP-N or RIINT signal is input to OPE unit, OPE unit controls the main power supply (TLHV board) by outputting the MP/OFF (ACON) signal.

   - PC1-N: Presence of document on hopper
   - HUP-N: OFF-Hook detection for TEL 1 and TEL 2 terminal
   - RIINT: Ringing detection signal

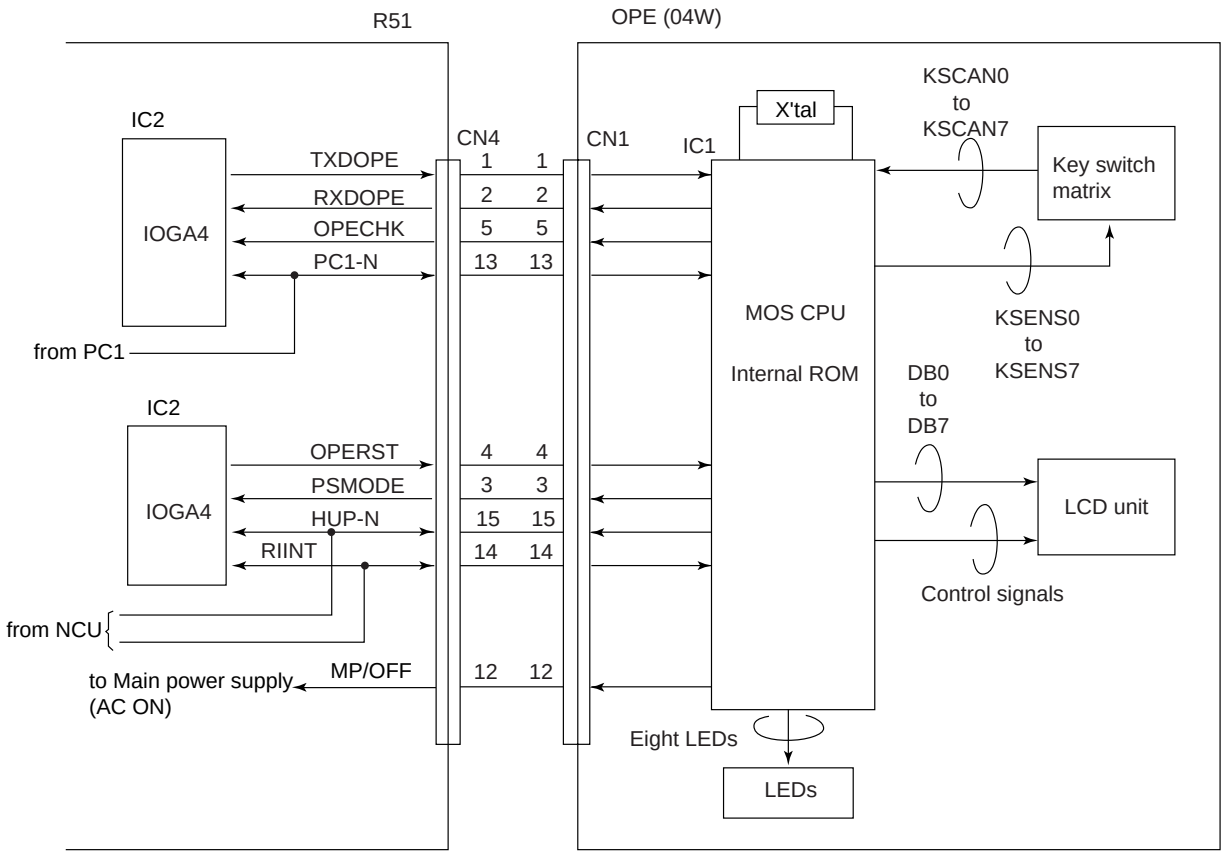



**Figure A3.2.1 Block Diagram of OPE (operation unit)**

## A3.3 Power Supply Unit

### A3.3.1 MPW1446 (230V)/MPW1546 (120V) Circuit Diagram

IMPORTANT:
Oki Data Corporation recommends that maintenance of the Power supply unit (MPW1446 (230V)/MPW1546 (120V)) be performed by replacement of a unit, not by replacement of components.

Therefore,
1) circuit descriptions in this section are for reference.
2) orders for components of the power supply unit cannot always be accepted.

Functions of unit:

The circuit generates the following direct currents (DC) based on the alternating current,
AC 120 V +6%, -15%
AC 230 V +15%, -14%

1. Low-voltage power supply circuit

   This circuit generates the following voltages.

2. Input ratings

| Output Voltage | Output Voltage |
|---|---|
| +5 V | Logic circuit supply voltage (IC, LSI), and high-voltage source voltage |
| -8 V/+24 V | CIS (contact image sensor) |
| +26 V | Send motor, drum motor and clutch |

- Voltage : AC 120 V +6%, -15% (AC 102 V to 127 V)
  AC 230 V +15%, -14% (AC 198 V to 264 V)
- Frequency : 50 Hz/60 Hz +/-2%

3. Output ratings

| Pin No. CN003 | Rated Voltage | Rated Current | Current Range | Voltage Range | Output Ripple | Output Noise |
|---|---|---|---|---|---|---|
| 2, 3 | +5V | 1.5V | 0.2~4.4A | +4.9~+5.3V | 100mV | 250mV |
| 8 | +26V | 1.3V | 0~1.3A | +26~+40V | 500mV | — |
| 1 | +24V | 0.2V | 0~0.2A | +22.8~+25.2V | 50mV | 100mV |
| 9 | -8V | 0.1V | 0~0.1A | -6.5~-12.0V | 100mV | 250mV |
| 12 | +5VS | 20mA | 15~50mA | +5.0~5.4V | 100mA | 250mA |

4. Block diagram

Figure A3.3.1 shows a block diagram.

* The information contained herein can change without notice owing to product and/or technical improvements.

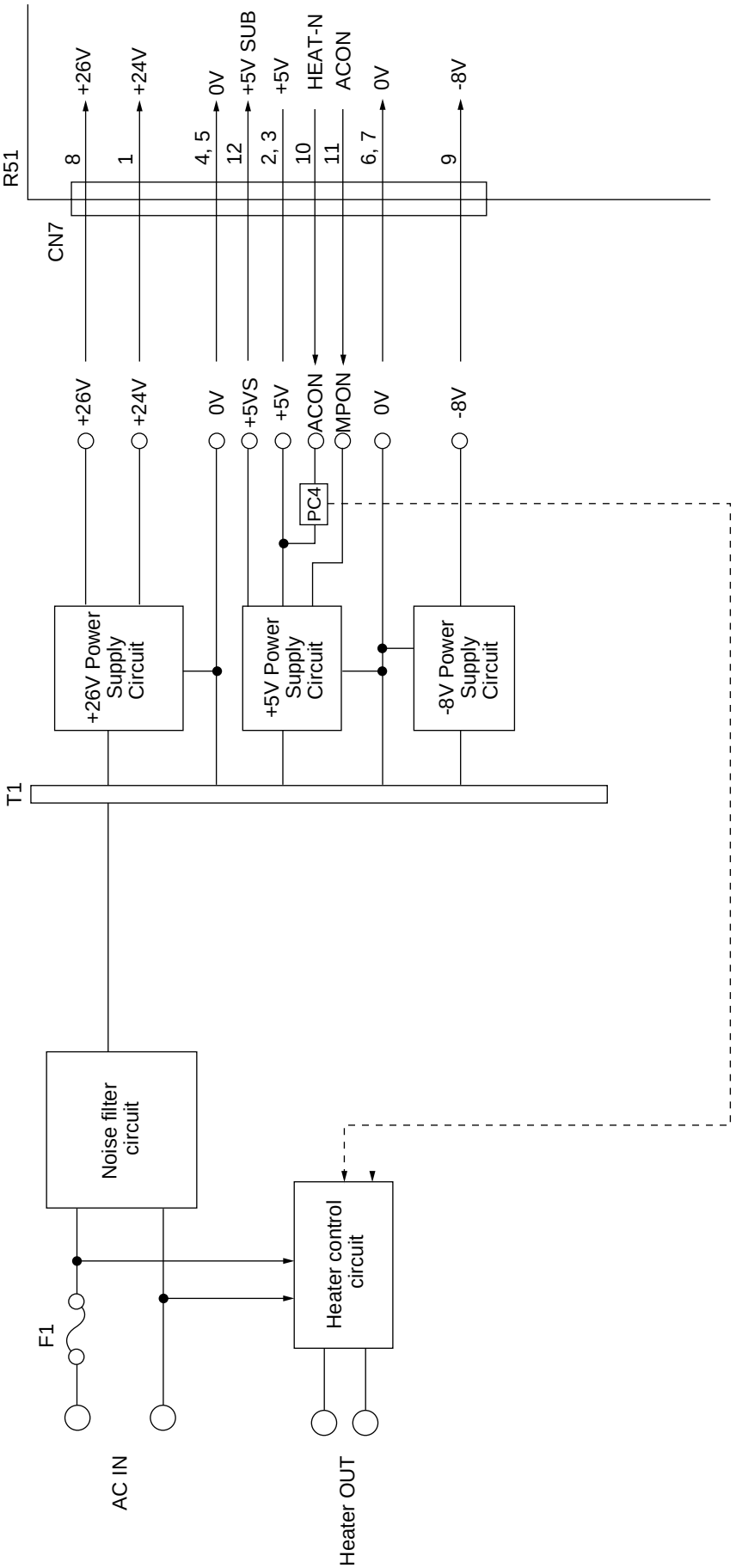



**Figure A3.3.1 Block Diagram**

## A3.4 P2H Circuit Diagram

This circuit consists of photo-sensors and high voltage generation unit.

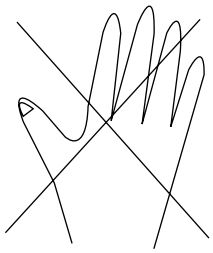
Note: If the high-voltage unit inside the P2H circuit board is replaced, the output voltage and current output from the terminals must be checked and adjusted. This section does not describe the checking and adjustment methods, however.

### DANGER:

**DANGER**

Do Not
Touch !

HIGH VOLTAGE



You may be subjected to high-voltage electric shock by touching the following parts without an insulating material:

a. High-voltage unit

b. Contact ass'y

High voltage outputs are connected to the contact ass'y as shown below:

1. High-voltage section

1.1 Functional overview

The high-voltage outputs consist of TR1 (3.9 kV), TR2 (-0.75 kV), DB1 (+265 V), DB2 (-265 V), SB2 (-550V), CB1 (+400 V), CB2 (-1.35 kV) and CH (-1.30 kV) and are obtained as follows. The control signal obtained from IOGA4 of R51 board is applied to High-voltage power supply circuit. As result, the driver current is applied to the drive circuit, which will provide the high-voltage outputs.

Note:

| Signal Name | Output Voltage | Application | |
|---|---|---|---|
| SB1/SB2 | 0±5 V/-550 V | Voltage applied to toner supply roller. | P2H |
| DB1/DB2 | +265 V/-265 V | Voltage applied to developing roller. | P2H |
| TR1/TR2 | +3.9 kV/-0.75 kV | Voltage applied to transfer roller. | P2H |
| CH | -1.30 kV | Voltage applied to charging roller. | P2H |
| CB1 | +400 V | Voltage applied to cleaning roller. | P6L |
| CB2 | -1.35 kV | Voltage applied to cleaning roller. | P6L |

1.2 SB2, DB1, DB2 (P2H)

1) These four high-voltage outputs are obtained from the flyback voltage of Q10.

2) The positive and negative voltages of DB1 and DB2 are obtained by switching the charging direction under the triac and thyristor.

3) Feedback is not applied to these outputs. However, SB2 is limited by D85 and DB2 is limited by D84 so as not to provide an output exceeding a preset voltage.

1.3 TR1 and TR2 (P2H)

1) The TR1 high-voltage is obtained by rectifying the secondary output of Q17 switching circuit by a voltage-doubler rectifier.

2) TR1 output circuit has both constant current (hereinafter called CC) and constant voltage (hereinafter called CV) modes.

3) At first, TR1 output circuit operates in the CC mode. Once the voltage determined by parameters such as roller and medium is obtained, this circuit changes to operate in the CV mode by the control signal.

4) The TR2 output voltage is regulated by keeping the voltage obtained by switching operation of Q15 at a constant voltage by D66 and D65.

1.4 CH (P2H)

1) The CH output voltage is stabilized by keeping the primary flyback voltage obtained by switching operation of Q16 at a constant voltage by D76 and D82.

1.5 CBI, CB2 (P6L)

1) The CB1 output voltage is stabilized by keeping the primary flyback voltage obtained by switching operation of Q2 at a constant voltage by D7 and D6 and D5.

2) The CB2 output voltage is stabilized by keeping the primary flyback voltage obtained by switching operation of Q1 at a constant voltage by D7 and D6 and D5.

2. Photosensors

The photosensors mounted on this circuit board/sensor board supervise the paper running state during printing. These four photosensors are used in this printer as listed below. All of their outputs enter IOGA4 for referring to and processing by the IOGA4 (CPU).

1) PS1 (photosensor 1): TNRSNS

Detects the lack of the toner.

2) PS2 (photosensor 2): PSIN

Detects the leading part of the paper and gives the supervision timing for switching from hopping operation to feeding operation. Supervises the paper running state and the paper size according to the paper arrival time and running time.

3) PS3 (photosensor 3): PSOUT

Supervises the paper feed according to the time of arrival at the sensor and the time of passage of paper.

4) PS4 (photosensor 4): WRSNS

Detects the leading part of sensor.
Supervises the paper running state.

3. Cover open circuit

The cover open circuit consists of CVSW. When the Cover-Main is opened, the cover open microswitch (CVSW) on the OLHV/TLHV board is turned off to cut the supply of H5V to the high-voltage power supply circuit. As a result all high-voltage outputs are interruptted. At the same time, the CVOPN-N signal is sent to the control board to notify it the off state of the microswitch, and the control board performs the cover open processing.

## A3.5 UNC, WN5, FN5 and DN5 Circuit Diagram

The NCU board is selected from UNC, WN5, FN5 and DN5 because it differs depending on country's specifications. Therefore, the NCU circuit diagram is destined for the following countries.

- UNC circuit diagram
  US and Canada.

- WN5 circuit diagram
  Sweden, Finland, The Netherlands, Ireland, Portugal, New Zealand, Australia, Belgium, Spain, Greece, Norway, Denmark, Italy, and other countries.

- FN5 circuit diagram
  France and UK

- DN5 circuit diagram
  Germany, Switzerland and Austria.

1. Block diagram

   - Figure A3.5.1 shows a block diagram of UNC circuit.
   - Figure A3.5.2 shows a block diagram of WN5 circuit.
   - Figure A3.5.3 shows a block diagram of FN5 circuit
   - Figure A3.5.4 shows a block diagram of DN5 circuit.

2. General functions of this circuit are as follows:

   1) Generates and detects signals to be exchanged with a telephone exchange or network in Phases A and E defined by ITU T.30.
      - Loop formation for call origination
      - Line current detection (see note 1) before call origination
      - Dial tone detection (see note 1)
      - Generation of dial pulses (see note 2)
      - Busy tone detection (see note 1)
      - Ringing signal detection

   2) Sends various data and signals from the R51 board to the telephone line after amplification.
      - Picture data/Protocol/Tonal signals/PB tone, etc.

   3) Sends the following signals received from the line to the R51 board as data after amplification.
      - Picture data/Protocol/Tonal signals, etc.

      Note 1: This procedure may be omitted depending on the dial parameters.
      Note 2: MF (Multi-frequency) tone is generated by the modem and transferred to the telephone line via the NCU board.

3. Explanation on CN3 Terminals

| CN3 pin No. | Terminal name | Explanation | UNC (US.CA) | WN5 (INT'L) | DN5 D.A.CH) | FN5 (F.UK) |
|---|---|---|---|---|---|---|
| 1 | REV2 | Detection and output of the direction of DC line current. | * | * | * | * |
| 2 | OH2 | Detection of off-hook of terminal connected to TEL-1 or TEL-2. | | | | |
| 3 | OH1 | Output upon circuit current detection after fax line seizure | * | * | * | * |
| 4 | RI | 0 - 5 V signal output synchronized with the ringing signal frequency | | | | |
| 5 | NC | Unused terminal | * | * | * | * |
| 6 | PP | Relay control signal for special service code detection at parallel pickup or remote reception | | | | |
| 7, 8 | E | GND | | | | |
| 9, 10 | sub + 5 V | Sub power supply for OH2 and RI detection | | | | |
| 11, 12 | + 5 V | Power supply for relays and logic circuits | | | | |
| 13, 14 | + 5 VA | +5 V power supply for analog circuit | * | * | | * |
| 15, 16 | S | TX Signal | | | | |
| 17, 18 | – 5 VA | – 5 V power supply for analog circuit | * | * | | * |
| 19, 20 | R | RX Signal | | | | |
| 21, 22 | SG | Signal ground | | | | |
| 23, 24 | Rp | Receiving sensitivity determination terminal | | | | |
| 25 | DP | Pulse dial control signal | | | | |
| 26 | CML | Line seizure control signal | | | | |
| 27 | F. ICC | Loop current control signal upon line seizure | * | * | * | |
| 28 | SR | Control signal for connection between LINE and TEL terminals | | | | |
| 29 | PBXE | Control signal for connecting one of LINE terminal to the PBXE terminal | * | * | | * |
| 30 | MUTE | Control signal for pulse dial improvement and bell shunt relay | * | | | |

Note *: Unused.

4. Description on the NCU Block Diagram

4.1 UNC circuit diagram

① Lightning arresters (AR1, 2)
The nominal operating voltage is 350 V.
When connecting the ground of the arrestor to the chassis, tighten ARG on the PCB with a screw. At this time, the PCB is grounded through the power cable.
The TB1 arrestor ground terminal can also be used to connect to the earth directly.

④ DC circuits (R10, R11, C4)
These circuits provide DC characteristics according to the line requirements using the primary DC resistor in the line transformer T1 and the R10 and R11 resistors .
The capacitor C4 bypasses AC signals.

⑤ Impedance matching network (R523, R536, C503)
This circuit matches the impedance between the line and equipment to reduce reflection of transmitted signals.

⑥ Receiving sensitivity (R574, R504)
The receiving sensitivity at line seizuring is determined by R574 and the MF tone receiving sensitivity at parallel pickup is determined by R504.

⑦ CML (RL1)
This circuit selectively switches the line between the telephone or facsimile.

⑧ SR (RL2)
This circuit connects the line with the telephone. During facsimile transmission, it disconnects the telephone.

⑪ PP (RL6)
If this circuits detects MF or CNG tones without seizuring a line, it sets a proper receiving sensitivity.

⑫ DP (RL3)
This circuit generates pulse dials.
If the circuit detects MF or CNG tones without seizuring a line, it opens to increase the impedance.

⑬ Pickup RC (R5, C31)
These circuits insert a high-impedance resistor and capacitor serially to prevent the line impedance from dropping by the line transformer T1.

⑭ Ring detectors (IC1)
These circuits detect a ring signal arriving to the line. If the input ring signal exceeds a specific voltage, the circuits output a signal having of RI the same frequency as incoming RI.

⑮ Line transformer (T1)
This circuit processes send/receive signals required for facsimile transmission, dial tone receive signals required for automatic dialing, and MF tone send and remote receive signals. It separates between the line and equipment in terms of DC and also keeps a balance between the line and the ground. The transformer on the UNC board for OKIFAX 5600 is covered with the shield case for the low-level receiving countermeasure.

⑯ Off-hook detector (IC2)
This circuit detects the off-hook state of the telephone connected to the TEL1, TEL2 through LINE terminals.

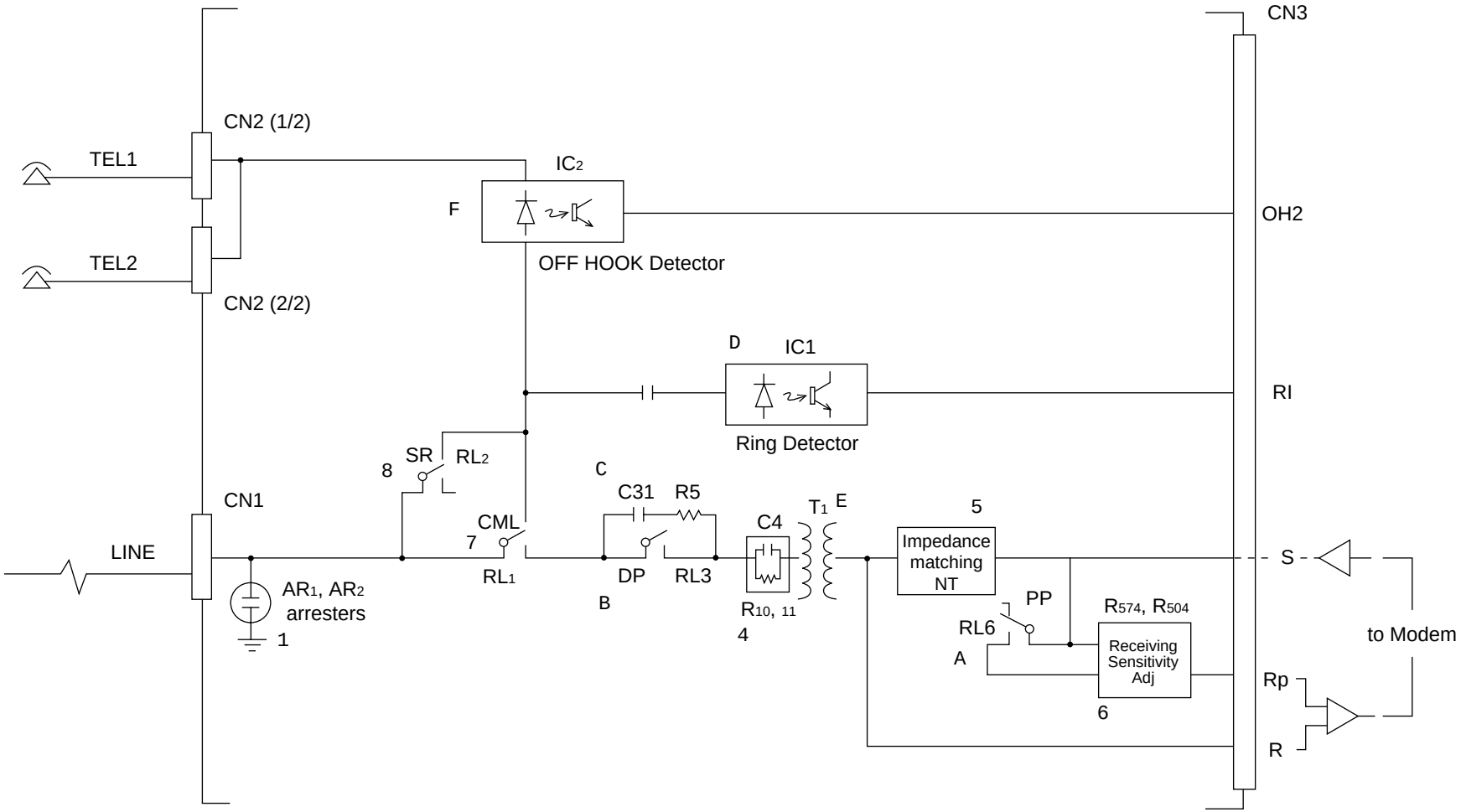



**Figure A3.5.1 Block Diagram of UNC**

## 4.2 WN5 circuit diagram

① Lightning arresters (AR1, 2)
The nominal operating voltage is 500 V.
When connecting the ground of the arrestor to the chassis, tighten ARG on the PCB with a screw. At this time, the PCB is grounded through the power cable.
The TB1 arrestor ground terminal can also be used to connect to the earth directly.

② Loop current detector (IC4) — Optional
When a line is seizured, this circuit detects a DC loop current to notify the fact.
For detection (OH1), it outputs the low level to the nominal input current of 10 mA or more.

③ Diode bridge (DB1)
This circuit rectifies the loop current so that the DC circuit characteristics are not affected by a polarity change over the line.

④ DC circuits (Q3, R540, R541, C13, R9, R209, and R309)
These circuits provide DC characteristics according to the line requirements depending on the DIP SW (S3) position.

⑤ Impedance matching network (R523, R536, C503 ... R823, R836, C803)
This circuit matches the impedance between the line and equipment to reduce reflection of transmitted signals.
It provides impedance (return loss) characteristics to meet the line requirement using the connector keys (CN15 to CN45).

⑥ Receiving sensitivity (R537, R539...R837, R839)
The receiving sensitivity at line hunting is determined by R539 to R839 depending on the line impedance. Similarly, the MF tone receiving sensitivity at parallel pickup is determined by R537 to R837. The receiving sensitivity is set using connector keys (CN15 to CN45).

⑦ CML (RL1)
This circuit selectively switches the line between the telephone or facsimile.

⑧ SR (RL2)
This circuit connects the line with the telephone. During facsimile transmission, it disconnects the telephone.

⑨ DP (IC5)
This circuit generates pulse dial signals.

⑩ MUTE (IC7)
During pulse dialing, this circuit closes to reduce the DC loop resistance.

⑪ PP (RL6)
If this circuits detects MF or CNG tones without seizuring a line, it disconnects Impedance matching Net work (5) to increase the input impedance and also sets the receiving sensitivity.

⑫ MUTE (RL3)
During pulse dialing, this circuit opens to prevent pulse distortion caused by capacitor C11. If it detects MF or CNG tones without seizuring a line, it opens to increase the impedance.

㉕ Pickup RC (R590, C31)
These circuits insert a high-impedance resistor and capacitor serially to prevent the line impedance from dropping by the line transformer T1.

⑭ Ring detectors (IC1)
These circuits detect a ring signal arriving to the line. If the input ring signal exceeds a specific voltage, the circuits output a signal of RI having the same frequency as incoming RI.

⑮ Line transformer (T1)
This circuit processes send/receive signals required for facsimile transmission, dial tone receive signals required for automatic dialing, and MF tone send and remote receive signals. It separates between the line and equipment in terms of DC and also keeps a balance between the line and the ground.

⑯ Off-hook detectors (IC2, RL7)
These circuits detect the off-hook state of the telephone connected to the TEL1, TEL2, through LINE terminal. IC2 uses a high detection sensitivity than of RL7. In TEL/FAX mode, the higher sensitive IC2 is used to detect the off-hook state of the telephone while the main equipment is hunting a line.
Usually, IC2 is short-circuited by the CML relay (7) in the standby state and RL7 is used for off-hook detection.

⑰ Impedance switches (CN15 to CN45)
These circuits set the impedance according to the line requirement.
220: 220 ohm + 820 ohm//115 nF (CN15)
275: 275 ohm + 850 ohm//150 nF (CN25)
370: 370 ohm + 620 ohm//310 nF (CN35)
600: 600 ohm (CN35)

⑱ DC resistance switch (SW3)
This switch sets the DC resistance according to the line requirement.

⑲ Ring impedance switches (S1-3 to S1-6)
These switches set the ring impedance according to the line requirement.

⑳ Ring sensitivity switch (S4)
This switch sets the ring sensitivity according to the line requirement.

㉑ Telephone cascade/parallel switches (S1-1 to S1-2)
To connect the telephone connected to the TEL1 terminal and an external telephone in parallel, set the switches to ON.

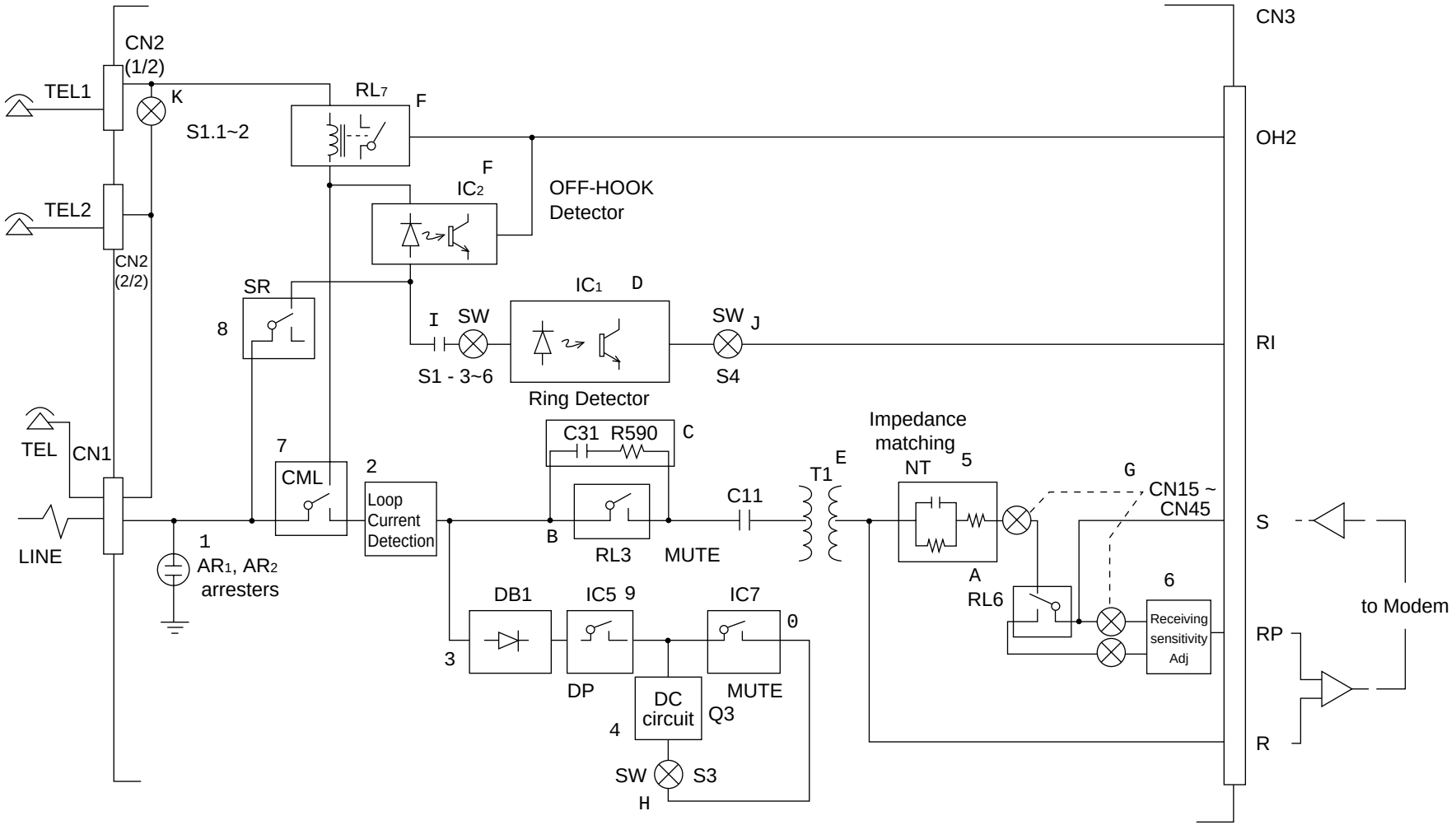



**Figure A3.5.2 Block Diagram of WN5**

## 4.3 FN5 circuit diagram

① Lightning arresters (AR1, 2)
The nominal operating voltage is 500 V.
When connecting the ground of the arrestor to the chassis, tighten ARG on the PCB with a screw. At this time, the PCB is grounded through the power cable.
The TB1 arrestor ground terminal can also be used to connect to the earth directly.

③ Diode bridge (DB1)
This circuit rectifies the loop current so that the DC circuit characteristics are not affected by a polarity change over the line.

④ DC circuits (Q3, R540, R541, C13, R9, R209)
These circuits provide DC characteristics according to the line requirements.

⑤ Impedance matching network (R523, R536, C503, R623, R636, C603)
This circuit matches the impedance between the line and equipment to reduce reflection of transmitted signals.
It provides impedance (return loss) characteristics to meet the line requirement using the S5-1 and 5-2.

⑥ Receiving sensitivity (R537, R539, R637, R639)
The receiving sensitivity at line hunting is determined by R539 or R639 and the MF tone receiving sensitivity at parallel pickup is determined by R537 or R639.
The receiving sensitivity set using DIP switch S5-3 to S5-6.

⑦ CML (RL1)
This circuit selectively switches the line between the telephone or facsimile.

⑧ SR (RL2)
This circuit connects the line with the telephone. During facsimile transmission, it disconnects the telephone.

⑨ DP (IC5)
This circuit generates pulse dial signals.

⑩ MUTE (IC7)
During pulse dialing, this circuit closes to reduce the DC loop resistance.

⑪ PP (RL6)
When it detects MF or CNG tones without seizuring a line, it disconnects NT (5) to increase the input impedance and also sets the receiving sensitivity.

⑫ MUTE (RL3)
During pulse dialing, this circuit opens to prevent pulse distortion caused by capacitor C11. When it detects MF or CNG tones without seizuring a line, it opens to increase the impedance.

⑬ Pickup RC (R590, C31)
These circuits insert a high-impedance resistor and capacitor serially to prevent the line impedance from dropping by the line transformer T1.

⑭ Ring detectors (IC1)
These circuits detect a ring signal arriving to the line. If the input ring signal exceeds a specific voltage, the circuits output a signal of RI having the same frequency as the incoming RI.

⑮ Line transformer (T1)
This circuit processes send/receive signals required for facsimile transmission, dial tone receive signals required for automatic dialing, and MF tone send and remote receive signals. It separates between the line and equipment in terms of DC and also keeps a balance between the line and the ground.

⑯ Off-hook detectors (IC2, RL7)
These circuits detect the off-hook state of the telephone connected to the TEL1, TEL2, through LINE terminals. IC2 uses a high detection sensitivity than of RL7. In TEL/FAX mode, the higher sensitive IC2 is used to detect the off-hook state of the telephone while the main equipment is hunting a line.
Usually, IC2 is short-circuited by the CML relay (7) in the standby state and RL7 is used for off-hook detection.

⑰ Impedance switches (S5-1 to 5-2)
These circuits set the impedance according to the line requirement.
S5-1: 370 ohm + 620 ohm//310 nF (UK)
S5-2: 600 ohm (F)

⑱ DC resistance switches (CN26 and CN36)
These switches set the DC resistance according to the line requirement.

㉗ FICC (IC6)
This circuits reduces the DC resistance to increase the loop current momentarily to assure operation of the switch at line seizuring.

㉘ Constant current circuits (Q1 and Q2)
These circuits provide DC characteristics according to the French line requirement.

㉙ Shunt (RL5)
This circuit prevents bell resonances in the telephone sets connected in parallel during pulse dialing and also reduces distortions of the pulse waveform.

㉚ Communication line terminal switches (CN26 and CN36)
Unlike other countries, pines 2 and 5 are connected to the line for the UK communication line. Set the switches to “F” for France and “UK” for UK.

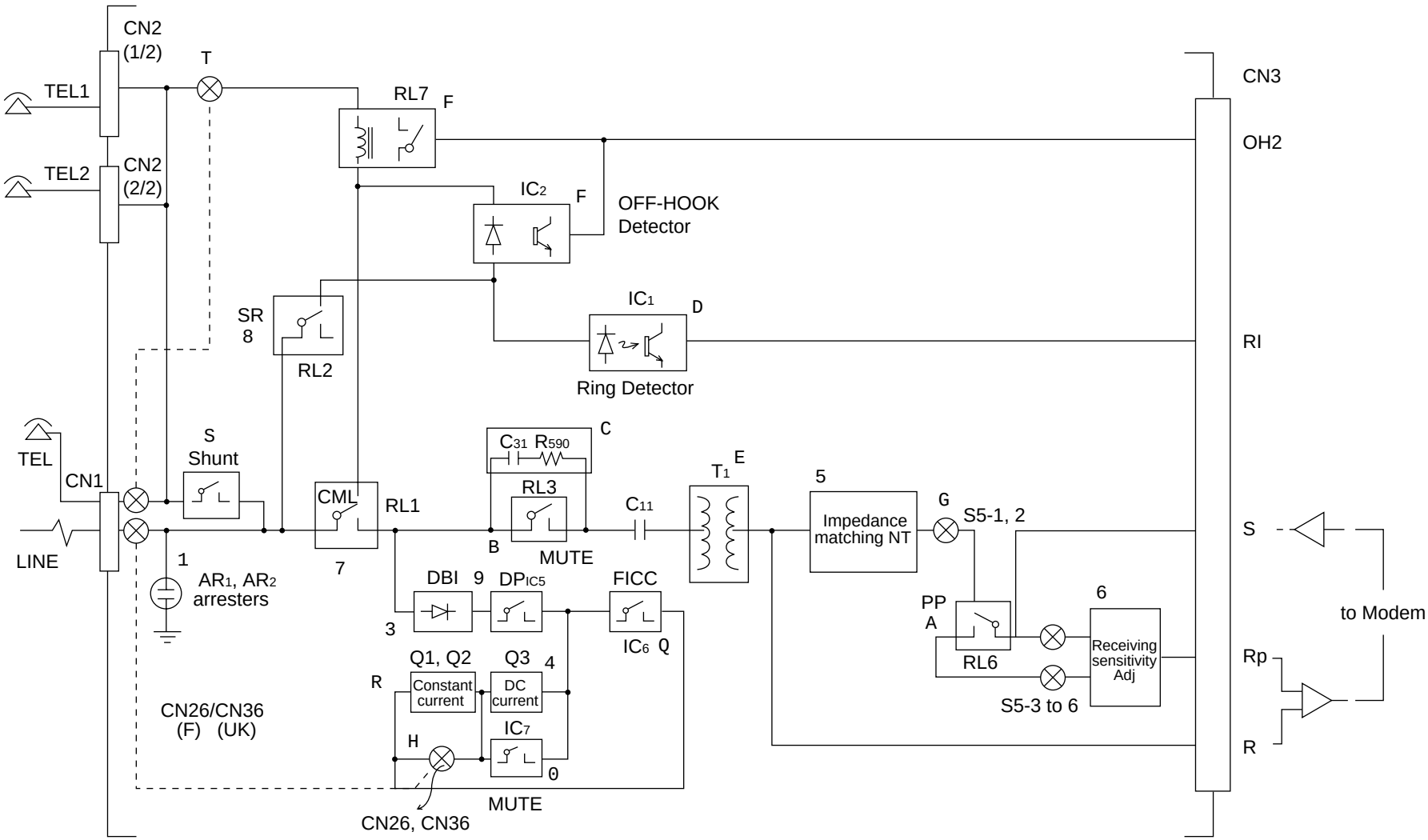



**Figure A3.5.3 Block Diagram of FN5**

## 4.4 DN5 circuit diagram

① Lightning arresters (AR1, 2)
The nominal operating voltage is 500 V.
When connecting the ground of the arrestor to the chassis, tighten ARG on the PCB with a screw. At this time, the PCB is grounded through the power cable.
The TB1 arrestor ground terminal can also be used to connect to the earth directly.

② Loop current detector (IC4) - Optional
When a line is hunt, this circuit detects a DC loop current to notify the fact.
For detection (OH1), it outputs the low level to the nominal input current of 10 mA or more.

③ Diode bridge (DB1)
This circuit rectifies the loop current so that the DC circuit characteristics are not affected by a polarity change over the line.

④ DC circuits (Q3, R540, R541, C13, R9, R209)
These circuits provide DC characteristics according to the line requirements.

⑤ Impedance matching network (R523, R536, C503, ...)
This circuit matches the impedance between the line and equipment to reduce reflection of transmitted signals.
It provides impedance (return loss) characteristics to meet the line requirement using the S4-3 and S4-4.

⑥ Receiving sensitivity (R537, R539, R637, R639)
The receiving sensitivity at line hunting is determined by R539 to R639 depending on the line impedance. Similarly, the MF tone receiving sensitivity at parallel pickup is determined by R537 or R637.
The receiving sensitivity is set using the DIP switches S4-5 to S4-8.

⑦ CML (RL1)
This circuit selectively switches the line between the telephone or facsimile.

⑧ SR (RL2)
This circuit connects the line with the telephone. During facsimile transmission, it disconnects the telephone.

⑨ DP (IC5)
This circuit generates pulse dial signals.

⑩ MUTE (IC7)
During pulse dialing, this circuit closes to reduce the DC loop resistance.

⑪ PP (RL6)
If this circuits detects MF or CNG tones without seizuring a line, it disconnects NT (5) to increase the input impedance and also sets the receiving sensitivity.

⑫ MUTE (RL3)
During pulse dialing, this circuit opens to prevent pulse distortion caused by capacitor C11. If it detects MF or CNG tones without seizuring a line, it opens to increase the impedance.

⑬ Pickup RC (R590, C31)
These circuits insert a high-impedance resistor and capacitor serially to prevent the line impedance from dropping by the line transformer T1.

⑭ Ring detectors (IC1)
These circuits detect a ring signal arriving to the line. If the input ring signal exceeds a specific voltage, the circuits output a signal of RI having the same frequency as incoming RI.

⑮ Line transformer (T1)
This circuit processes send/receive signals required for facsimile transmission, dial tone receive signals required for automatic dialing, and MF tone send and remote receive signals. It separates between the line and equipment in terms of DC and also keeps a balance between the line and the ground.

⑮ Off-hook detectors (IC2, RL7)
These circuits detect the off-hook state of the telephone connected to the TEL1, TEL2, through LINE terminals. IC2 uses a high detection sensitivity than of RL7. In TEL/FAX mode, the higher sensitive IC2 is used to detect the off-hook state of the telephone while the main equipment is hunting a line.
Usually, IC2 is short-circuited by the CML relay (7) in the standby state and RL7 is used for off-hook detection.

⑰ Impedance switches (S4-3 to S4-4)
These circuits set the impedance according to the line requirement.
S4-3: 220 ohm + 820 ohm//115 nF
S4-4: 600 ohm

⑲ Ring impedance switches (S1-4)
These switches set the ring impedance according to the line requirement.

⑳ Ring sensitivity switch (S4-4, S4-2)
This switch sets the ring sensitivity according to the line requirement.

㉑ Telephone cascade/parallel switches (S1-1 to S1-2)
To connect the telephone connected to the TEL1 terminal and an external trephone in parallel, set the switches to ON.

㉒ 16 kHz LPF (L7, L8, C7, C507, C9)
This low-pass filter removes 16 kHz metering pulses.

㉓ Transmitter amplifier (IC501 1/2)
This transmitter buffer amplifier amplifies DTMF signals and FAX send signals.

㉔ Receiver amplifier (IC501 2/2)
This amplifier amplifies MF tones, dial tones, and FAX receive signals.

㉕ 16 kHz LPF (IC502)
This active low-pass filter removes 16 kHz metering pulses.

㉖ PBXE (RL4)
This circuits connects one end of the LINE terminal to the PBXE terminal when requested from the PBX line.

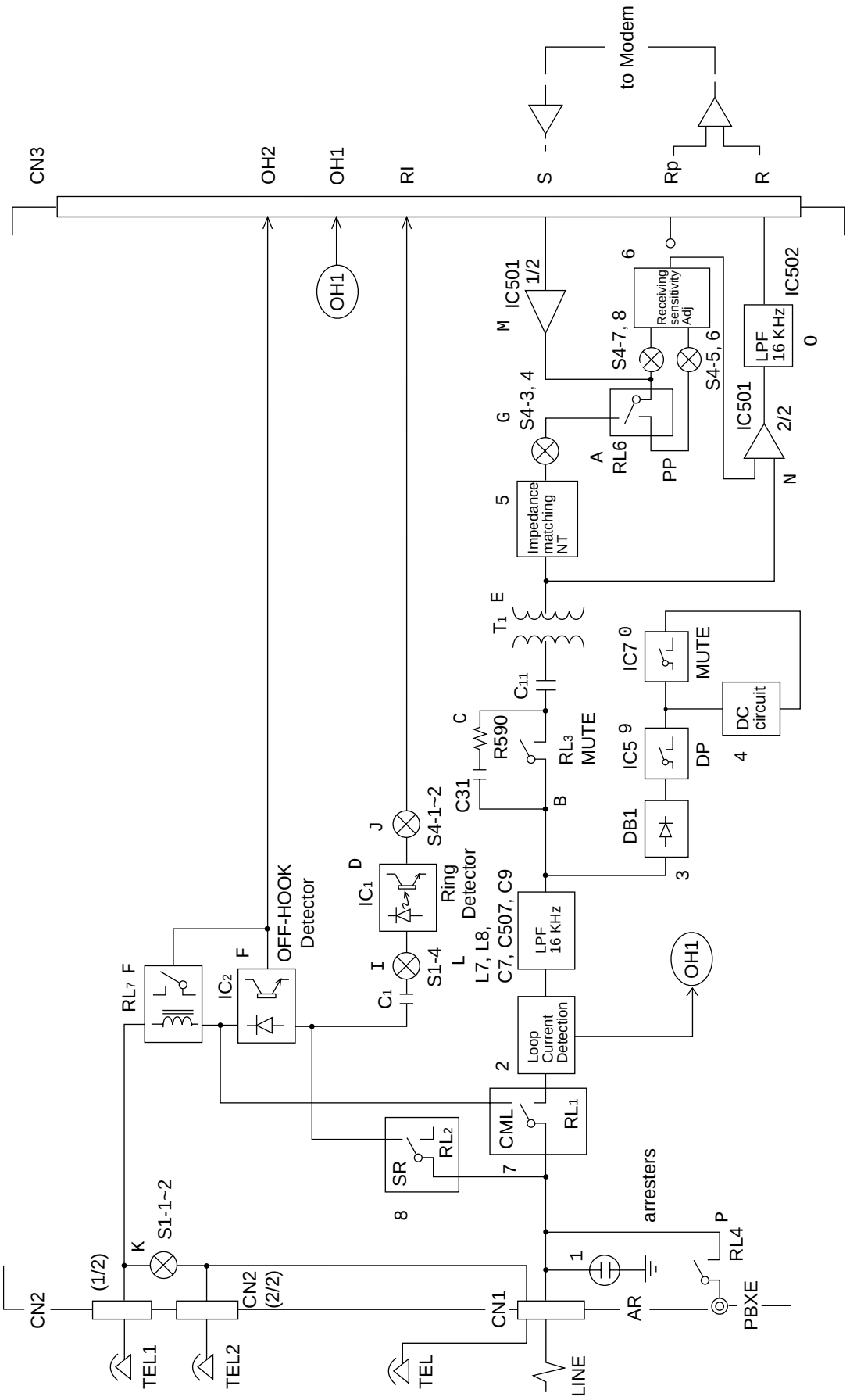
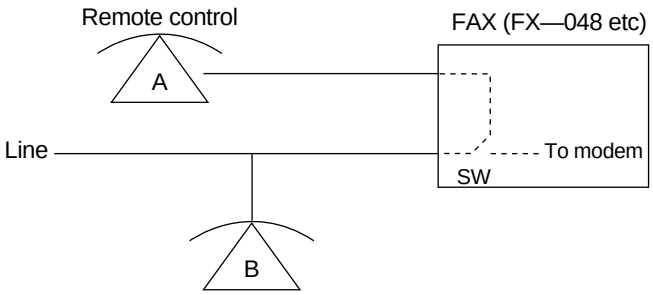



**Figure A3.5.4 Block Diagram of DN5**

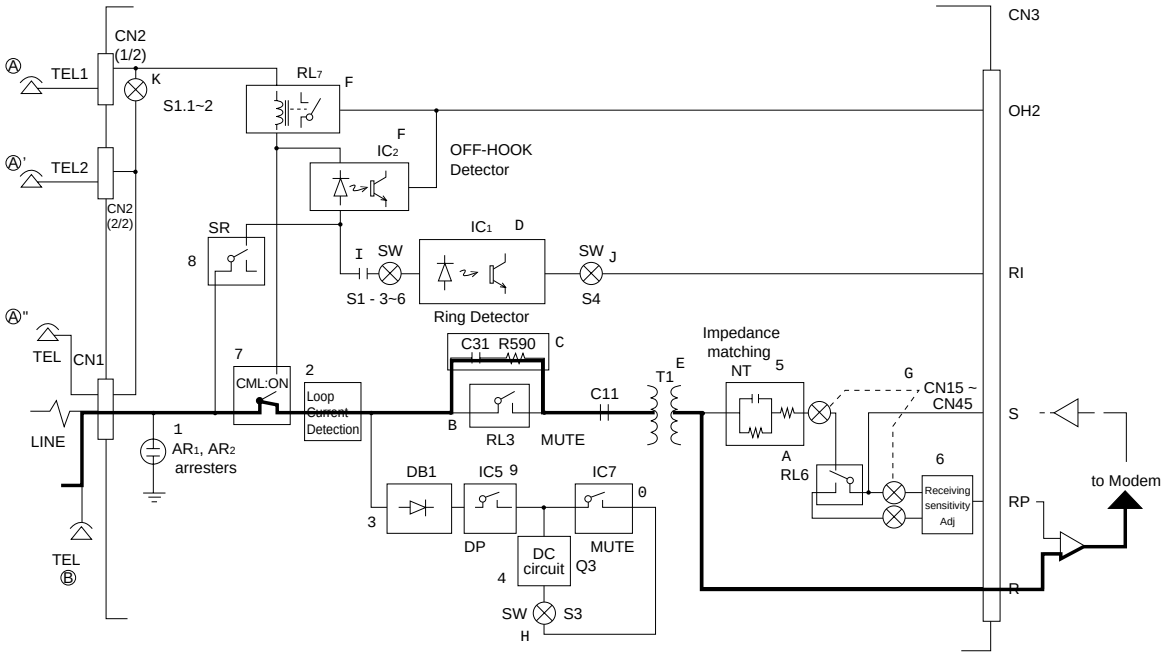
## 4.5 Outline of Parallel Pick Up

Parallel pick up is a function that controls a fax (to make a fax in receive mode) from a telephone set connected parallel to a fax. The two possible parallel connections of telephone sets A and B are shown in the figure.




Remote control: To control a fax from telephone set A.
Parallel Pick UP (PP): To control a fax from telephone set B.

- Why a PP function is needed!
  As shown in the following block diagram, telephone sets B, A, A' and A'' are connected to a telephone line.
  Since A, A' and A'' are connected to the line via fax, off-hook status of any of the telephone sets can be detected by the OFF-HOOK Detector 16 in the block diagram. However, off-hook status of telephone set B cannot be detected by the fax side.
- PP Control
  When a normal ring arrives at the fax from the line, the CML 7 turns on resulting in the formation of an AC loop via circuit 13. The AC loop makes it possible for the modem to detect the AC signals. If a user hooks up telephone set B after the first ring and enters the MF 2-digit special code in order to make the fax in the receive mode, then it becomes possible to detect the MF signals along that route.




**Block diagram for Parallel Pick Up Path.**

# Appendix B

# Descriptions of Print Operation

# (OKIOFFICE 84/OKIFAX 4500)

## Second Edition

## December, 1998

## Oki Data Corporation

40672201TH Rev. 4

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APPENDIX B1 Description of Print Operations for OKIOFFICE 84/ OKIFAX 4500

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**B.2 Electro-Photographic Process ..... B-5**

B.2.1 Explanation of Each Process Operation ..... B-7

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**B.4 Toner Low Detection ..... B-15**

**B.5 Cover Open ..... B-16**

## B.1 Electro-Photographic Processor

The electro-photographic processor prints out the image data to be sent from the main control board on sheets of paper. Figure B-1 shows the layout drawing of the electro-photographic processor.

(1) Image drum unit

The image drum unit makes a toner adhere to the formed electrostatic latent image with static electricity. This electrostatic latent image is formed by the lights irradiated from LED heads.

(2) Electromagnetic clutch

The electromagnetic clutch controls the rotation of the hopping roller according to signals from the control block.

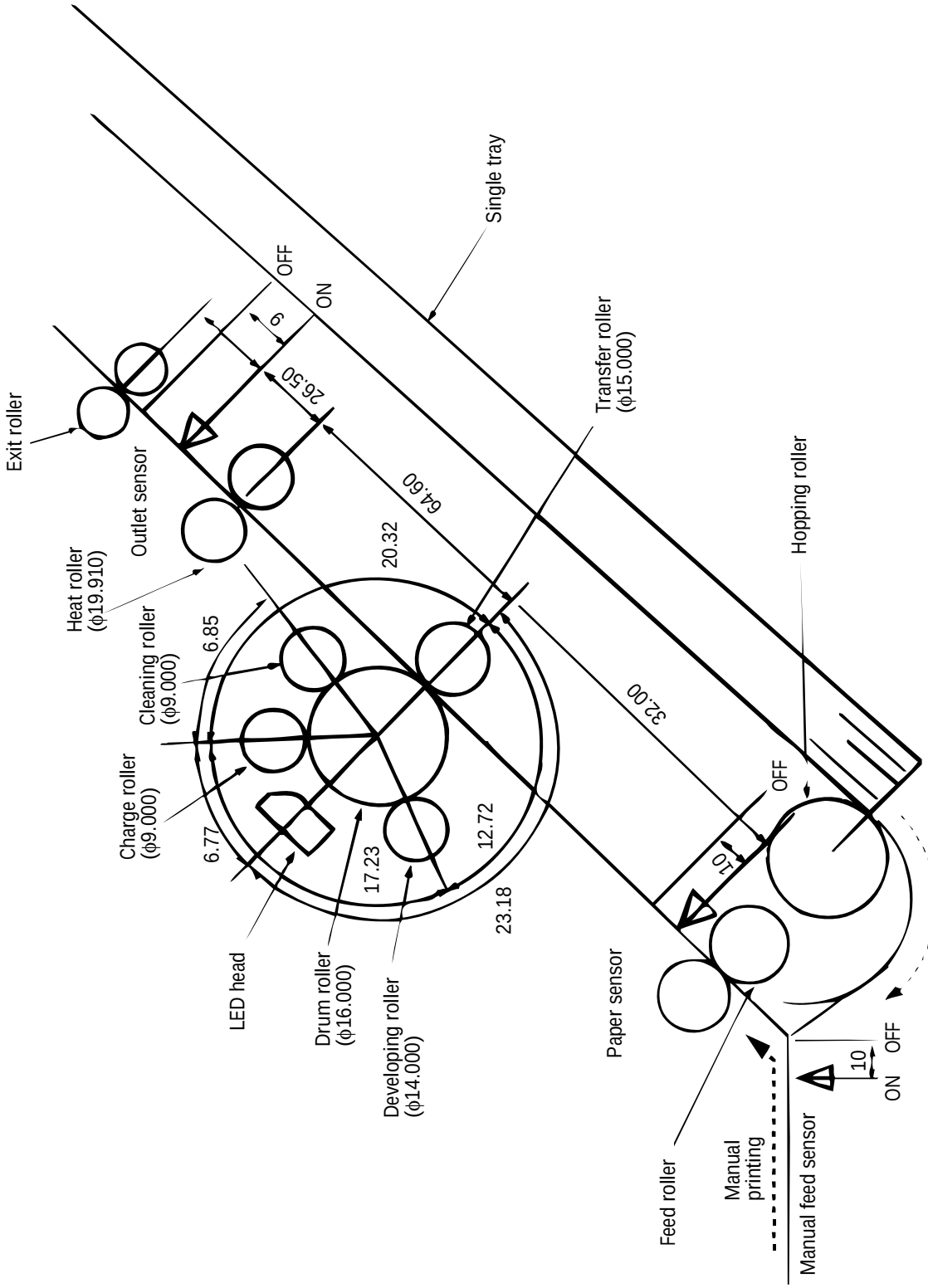



**Figure B.1 Layout Drawing of Electro-Photographic Processor**

(3) Pulse motor (Main)

This pulse motor of 48 steps/rotation is two-phase excited by the signal from the main control board; it performs feeding control by switching normal rotation to reverse rotation or vice versa and turning on/off the electromagnetic clutch. The relationship between the main motor, electromagnetic clutch, regist gear, drum gear, hopping roller is shown in the table below and on the subsequent pages.

| Main Motor | Electromagnetic Clutch | Hopping Roller | Regist Gear | Drum Gear | Operation |
|---|---|---|---|---|---|
| Normal rotation | OFF | Non-rotation | Non-rotation | Rotation | Warm-up |
| Reverse rotation | ON | Rotation | Rotation | Rotation | Hopping |
| | OFF | Non-rotation | Rotation | Rotation | Prinitng |

(4) LED head

The shift and latch registers receive image data from the main control board for each dot line. 2,560 or 2,496 LEDs are driven to radiate the image drum.

(5) Heat Assy

The heat Assy consists of a heater, a heat roller, a thermistor, and a thermostat.

The power supply unit supplies AC voltage to the heater according to the HEATON signal from the main control board to heat the heat roller. The main control board monitors the heat roller temperature via the thermistor and keeps the temperature constant by turning on/off the heater AC voltage supply.

If the heat roller temperature rises abnormally, the thermostat of the heater voltage supply circuit functions to forcibly suspend the AC voltage supply.

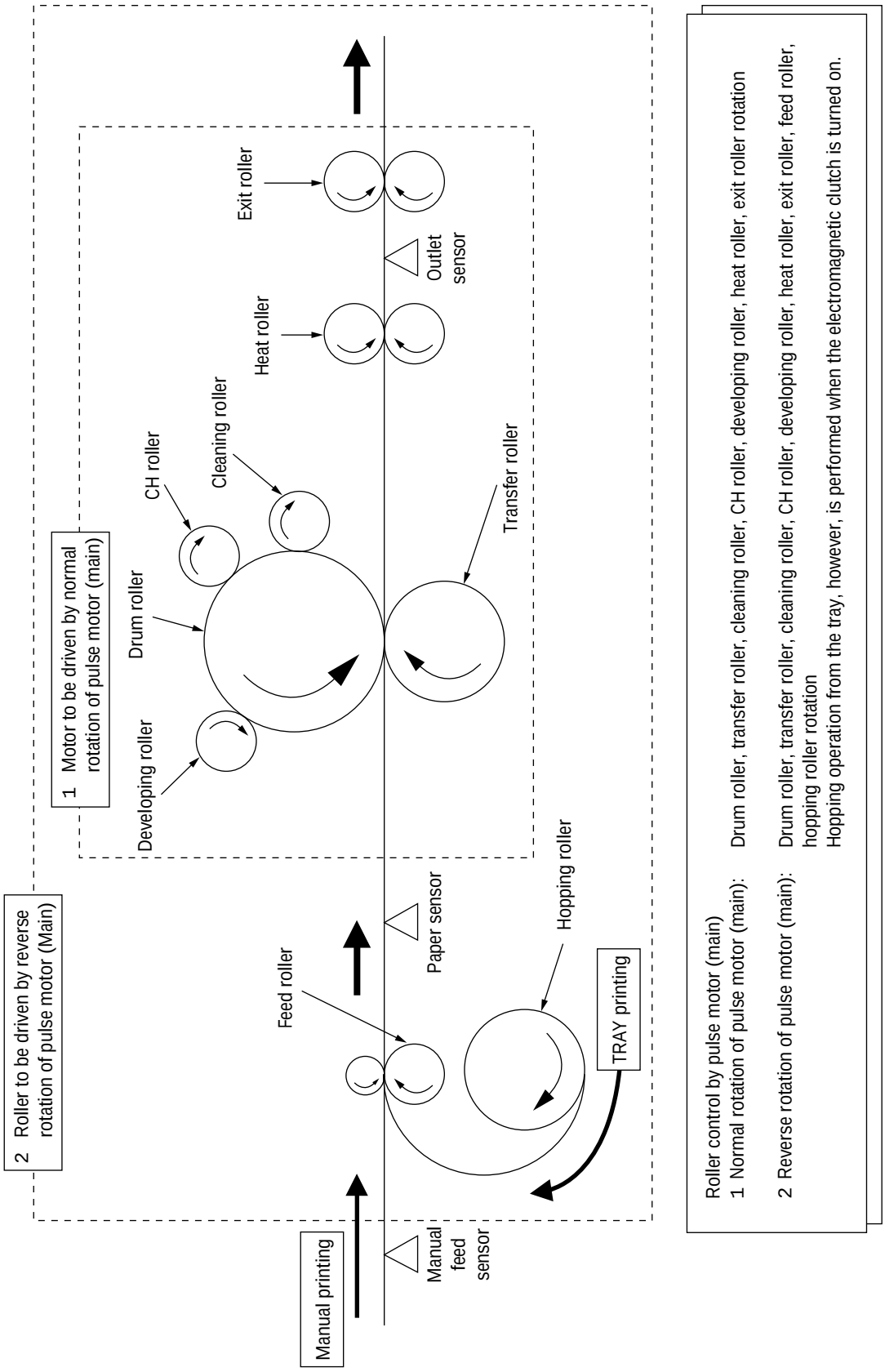

2 Roller to be driven by reverse rotation of pulse motor (Main)
1 Motor to be driven by normal rotation of pulse motor (main)
Exit roller
Outlet sensor
Heat roller
Cleaning roller
CH roller
Drum roller
Developing roller
Transfer roller
Hopping roller
Paper sensor
Feed roller
TRAY printing
Manual printing
Manual feed sensor
Roller control by pulse motor (main)
1 Normal rotation of pulse motor (main): Drum roller, transfer roller, cleaning roller, CH roller, developing roller, heat roller, exit roller rotation
2 Reverse rotation of pulse motor (main): Drum roller, transfer roller, cleaning roller, CH roller, developing roller, heat roller, exit roller, feed roller, hopping roller rotation
Hopping operation from the tray, however, is performed when the electromagnetic clutch is turned on.

**Figure B.2 Schematic Drawing of OKIOFFICE 84/OKIFAX 4500 Paper Feeding**

## B.2 Electro-Photographic Process

(1) Electro-photographic process

The electro-photographic process is outlined below.

① Charging

The surface of the OPC drum is charged negatively and uniformly by applying the DC voltage to the CH roller.

② Exposure

Light emitted from the LED head irradiates the negatively charged surface of the OPC drum. The surface potential of the irradiated surface attenuates to form the electrostatic latent image corresponding to the image signal.

③ Development and residual toner recovery

The negatively charged toner is brought into contact with the OPC drum, adhering to the electrostatic latent image on the OPC drum by static electricity. This adhesion causes the electrostatic latent image to change to a visible image.

At the same time, the residual toner on the OPC drum is attracted to the developing roller by static electricity.

④ Transfer

When paper is placed over the image drum surface, the positive charge which is opposite in polarity to that of the toner, is applied to the reverse side by the transfer roller. The toner is attracted by the positive charge and is transferred onto the paper. This results in the transfer of the toner image formed on the image drum onto the paper.

⑤ Cleaning

The cleaning roller temporarily attracts the residual toner on the transferred OPC drum with static electricity, then returns the toner to the OPC drum.

⑥ Fusing

The transferred unfused toner image is fused to a sheet of paper by applying heat and pressure to the image.

Figure B1.3 is a flow for the electro-photographic process.

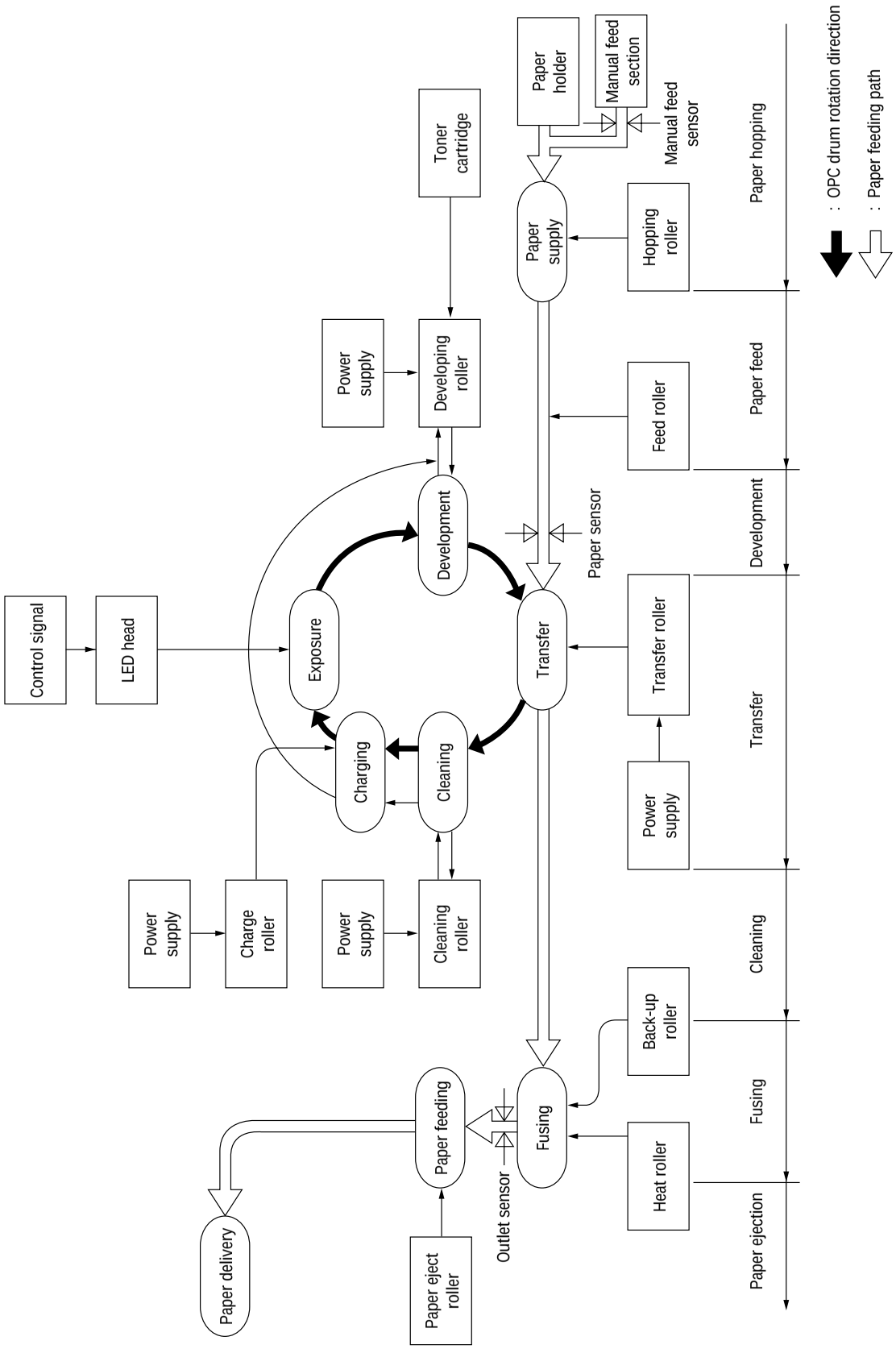


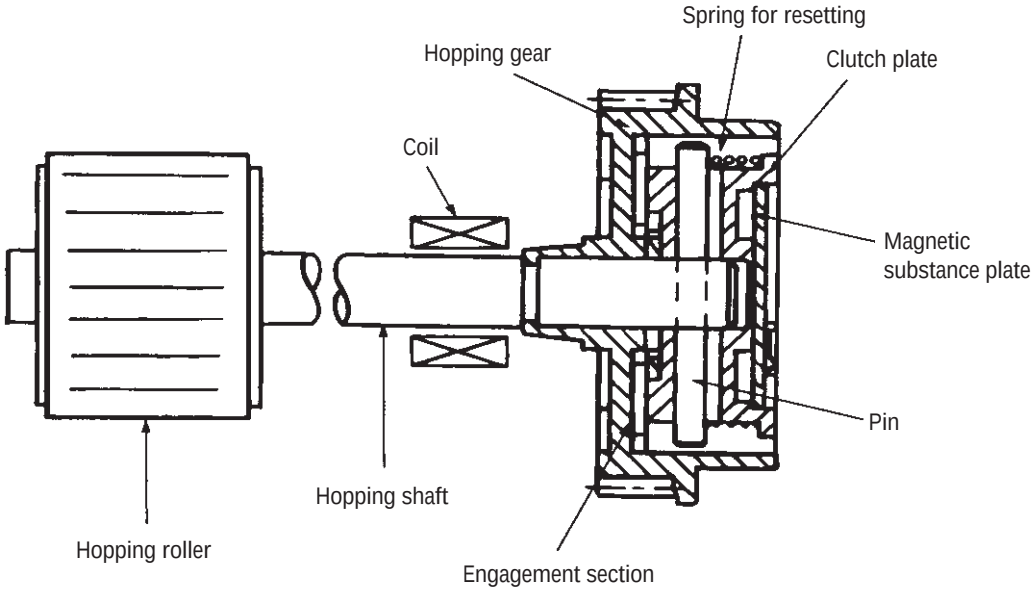

**Figure B.3 Flow for Electro-Photographic Process**

B.2.1 Explanation of Each Process Operation

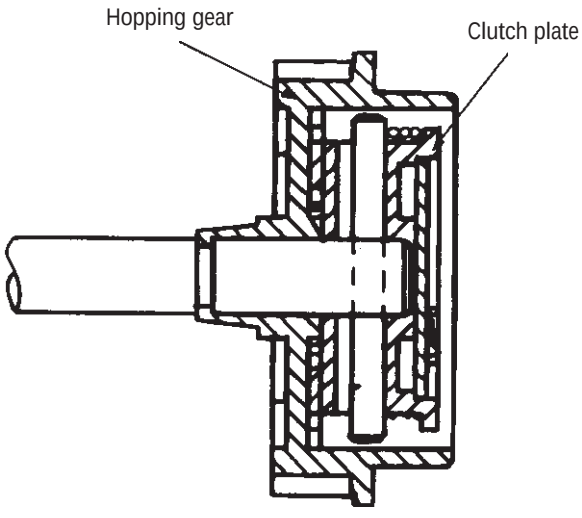
(1) Hopping

As shown in the figure below, the clutch for hopping is turned on/off according to current ON/OFF to a coil.

When the clutch is OFF




When the clutch is ON

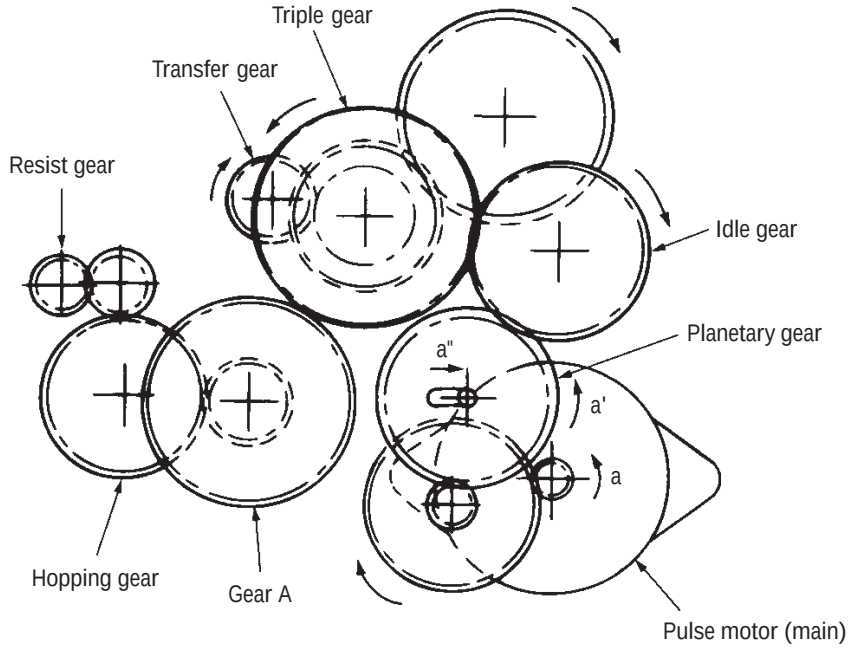



When the clutch is on, the hopping gear engages with the clutch plate to rotate the hopping roller.

When the clutch is off, the hopping gear is separated from the clutch plate by the spring for resetting, disabling the rotation of the hopping roller.

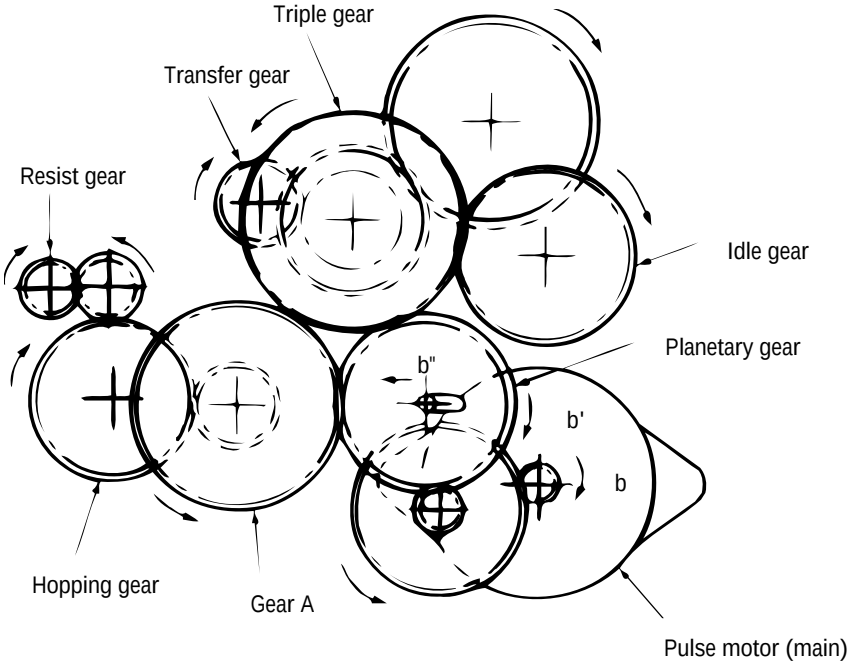
(2) Printing and warm-up

At warm-up




Rotate the pulse motor (main) in the a direction. The planetary gear rotates in the a' direction, dislocating its position in the a" direction. This causes the planetary gear to be separated from gear A. The hopping gear will not rotate. The triple gear and transfer gear rotate via the idle gear to drive the EP unit.

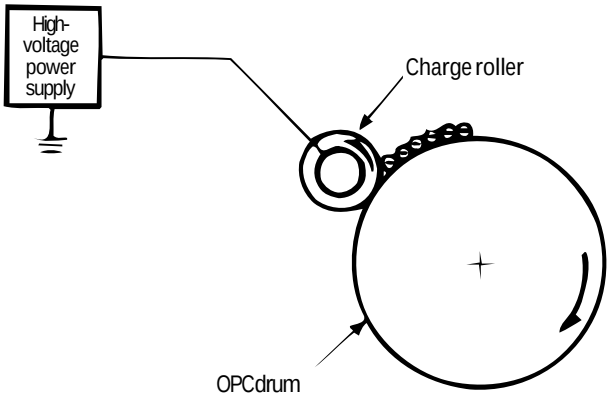
At printing




The paper is further advanced in synchronization to the print data.

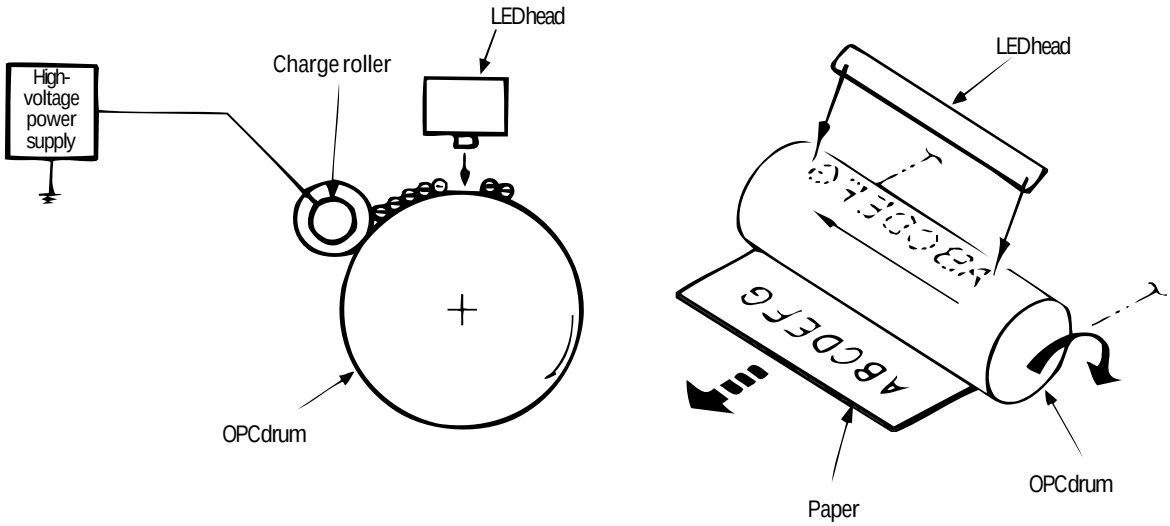
(3) Charging

Charging is performed by applying DC voltage to the charge roller that is in contact with the surface of the OPC drum.




(4) Exposure

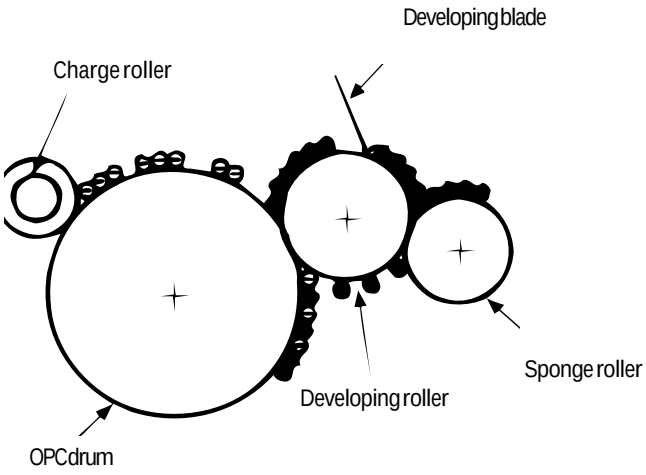
Light emitted from the LED head irradiates the negatively charged surface of the OPC drum. The surface potential of the irradiated surface attenuates to form the electrostatic latent image corresponding to the image signal.



(5) Development

The electrostatic latent image on the surface of the OPC drum is changed to a visible toner image by applying a toner to it. Development is performed in the contact part between the OPC drum and developing roller.

① The sponge roller negatively charges a toner and applies it to the developing roller.




② The toner applied to the developing roller is thin-coated by the developing blade.

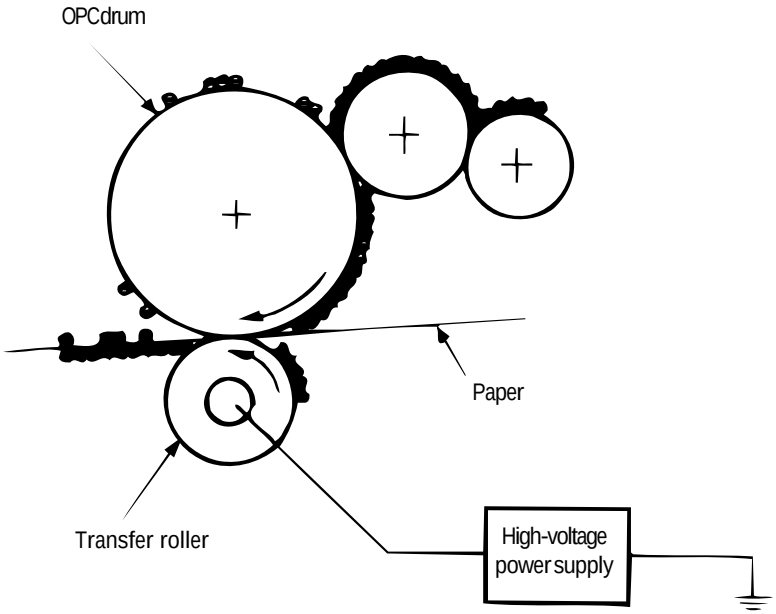
③ A toner adheres to the exposure part of the OPC drum in the contact part between the OPC drum and developing roller. This causes the electrostatic latent image to be changed to a visible image.

(6) Transfer

The transfer roller is composed of conductive sponge material. This roller is set so that the surface of the OPC drum and sheets of paper will adhere closely.

A sheet of paper is placed on the surface of the OPC drum and the positive charge opposite to the negative charge of a toner is applied from the reverse side by the transfer roller.

When a high positive voltage is applied from the power supply to the transfer roller, the positive charge induced on the surface of the transfer roller moves to the paper side at the contact part between the transfer roller and the sheet of paper. The positive charge on the lower side of the sheet of paper then causes the negatively charged toner adhering to the surface of the OPC drum to move to the upper side of the sheet. This enables transfer to the sheet of paper.

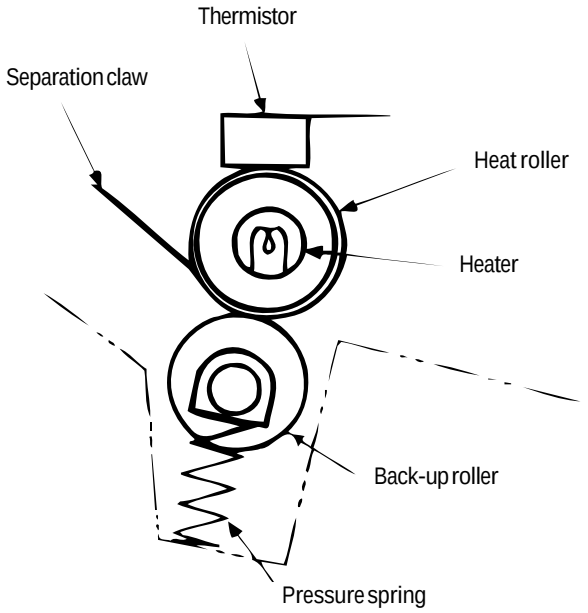


(7) Fusing

The transferred unfused toner image is fused to a sheet of paper because heat and pressure are applied when it passes between the heat roller and back-up roller.

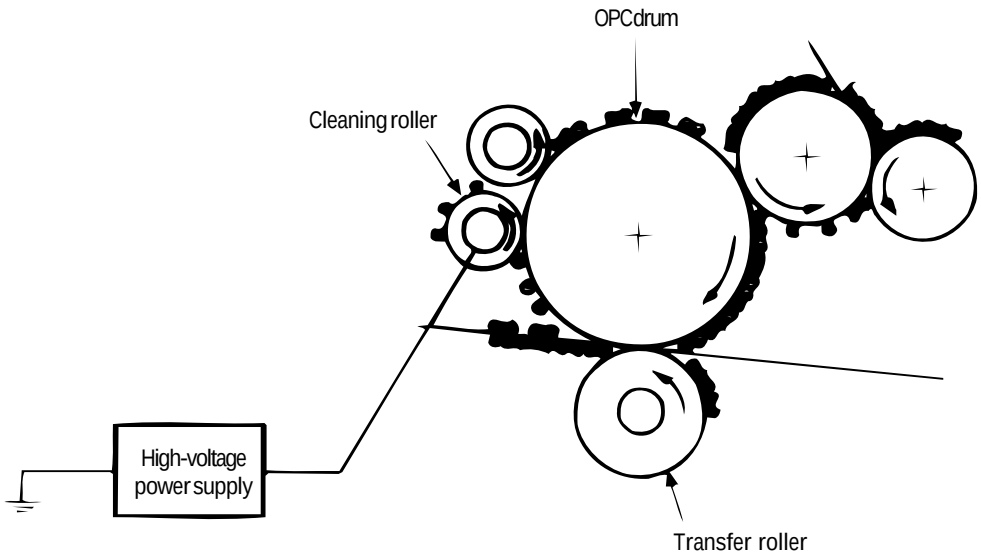
The Teflon-coated heat roller contains a 400 W heater (Halogen lamp) that heats the heat roller. The thermistor on the surface of the heat roller keeps the temperature of the heat roller constant. A thermostat is also installed for safety. If temperature rises abnormally, this thermostat opens to suspend voltage supply to the heater.

The back-up roller is pressurized to the heat roller by the pressure spring on each side.




(8) Cleaning

After transfer has terminated, the cleaning roller temporarily draws in the untransferred residual toner adhering to the OPC drum with static electricity and then returns it to the OPC drum.



## B.3 Paper Jam Detection

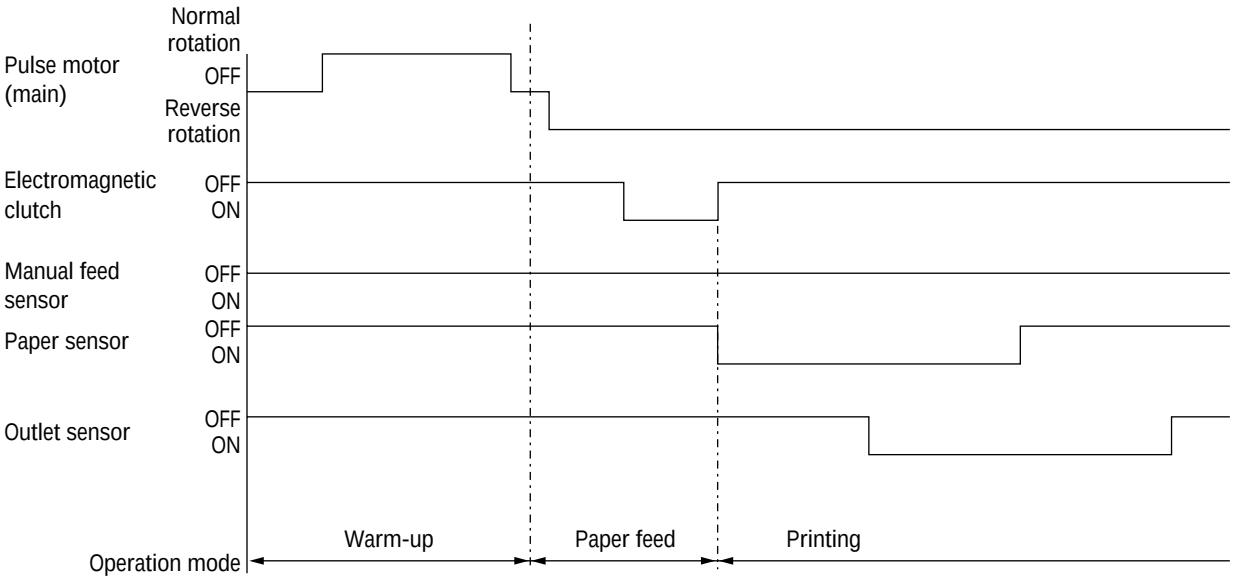
The OKIOFFICE 84/OKIFAX 4500 monitors the paper status when the power supply is on and during printing. In the following cases, the OKIFAX 4500 interrupts the printing process as a paper jam. Printing can be recovered by opening the cover, removing the jammed paper, and closing the cover.

| Error | Cause of Error |
|---|---|
| Paper inlet jam | • Only the manual feed sensor detects "Paper exists" when the power supply is on.<br>• The leading part of the paper does not reach the paper sensor although hopping operation was performed three time. |
| Paper feed jam | • The leading part of the paper does not reach the outlet sensor within a fixed time after it has passed the paper sensor. |
| Paper outlet jam | • The trailing part of the paper does not pass the outlet sensor within L mm after the leading part of the paper has passed the outlet sensor.<br>2.52" (64 mm) ≦ L ≦ 15.77" (400.6 mm) |
| Paper size error | • The trailing part of the paper does not pass the paper sensor within L mm after the leading part of the paper has passed the paper sensor.<br>2.52" (64 mm) ≦ L ≦ 15.77" (400.6 mm) |

Paper Feed Check List

| Type of Error | Supervisory Sensor | Reference Value | Error | |
|---|---|---|---|---|
| | | | Pluse | Minus |
| Paper feed error | Electromagnetic clutch ON/ Paper sensor ON | 69.8 | 35 | — |
| Paper feed jam1 | Paper sensor ON/ Outlet sensor ON | 122.9 | 20.0 | — |
| Paper size error | Paper sensor ON/ Paper sensor OFF | 2.52" (64 mm) ≦ L ≦ 15.77" (400.56 mm) | — | — |
| Paper outlet jam | Outlet sensor ON/ Outlet sensor OFF | 2.52" (64 mm) ≦ L ≦ 15.77" (400.56 mm) | 45.0 | 45.0 |
| Paper feed jam 2 | Paper end sensor OFF/ Outlet sensor OFF | 121.9 | 20.0 | 20.0 |

Unit: mm

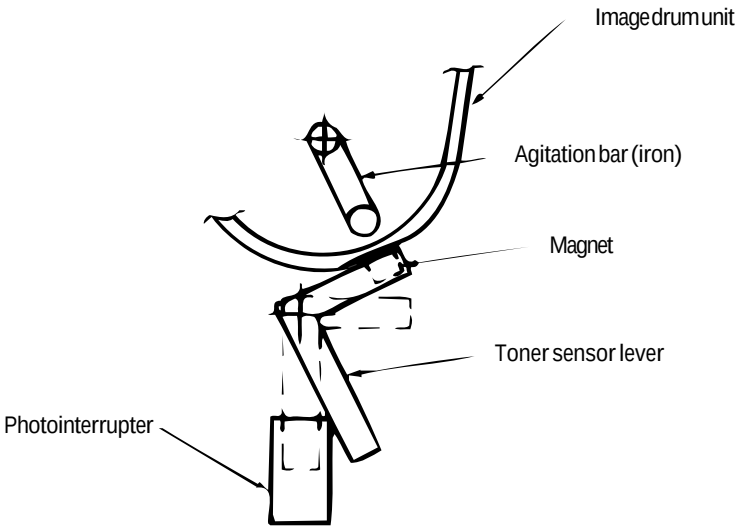



**Timing Chart for Paper Feed (Tray Feed)**

## B.4 Toner Low Detection

- Hardware configuration of toner sensor

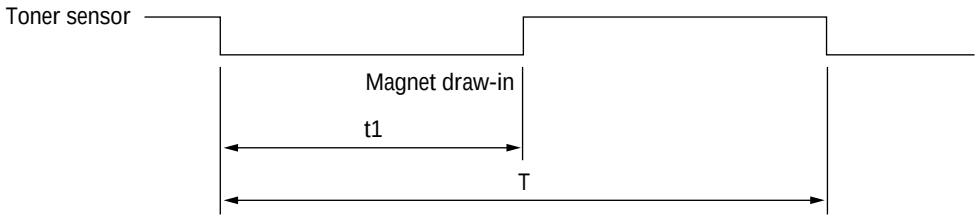
  The figure below shows the hardware configuration of the toner sensor.




**Hardware Configuration of Toner Sensor**

- Toner detection method

  (1) Toner sensor monitoring conditions are shown in the figure below.




***Caution:*** The toner sensor is not monitored when the drum is inactive.

(a) When the toner-low state continues twice, Toner Low occurs. (This state is monitored at a cycle of 40 milliseconds.)

(b) When the toner-full state continues twice, Toner Low is released. (This state is monitored at a cycle of 40 milliseconds.)

(c) When the toner sensor does not change over two cycles (T x 2), the toner sensor alarm state occurs.

(d) After the EP unit has been replaced (after the drum counter has been reset), Toner Low is not detected when the drum counter indicates 1 to 100 counts.

(2) The basic rotation cycle of the toner sensor is as follows:

| | T time |
|---|---|
| Basic rotation cycle of toner sensor | 4.9 sec. |
| Toner low time | t1 > 1.2 sec. |
| Toner full time | 1.2 sec. > t1 > |

## B.5 Cover Open

Opening the stacker cover turns off the microswitch on the high-voltage power supply board to suspend +5 V supply to the high voltage power supply. This results in the stop of all high-voltage outputs. At the same time, the CVOPN signal is issued to notify the main control board of the switch status and cover open processing is executed.

# Appendix C

# Circuit Diagrams and Parts List

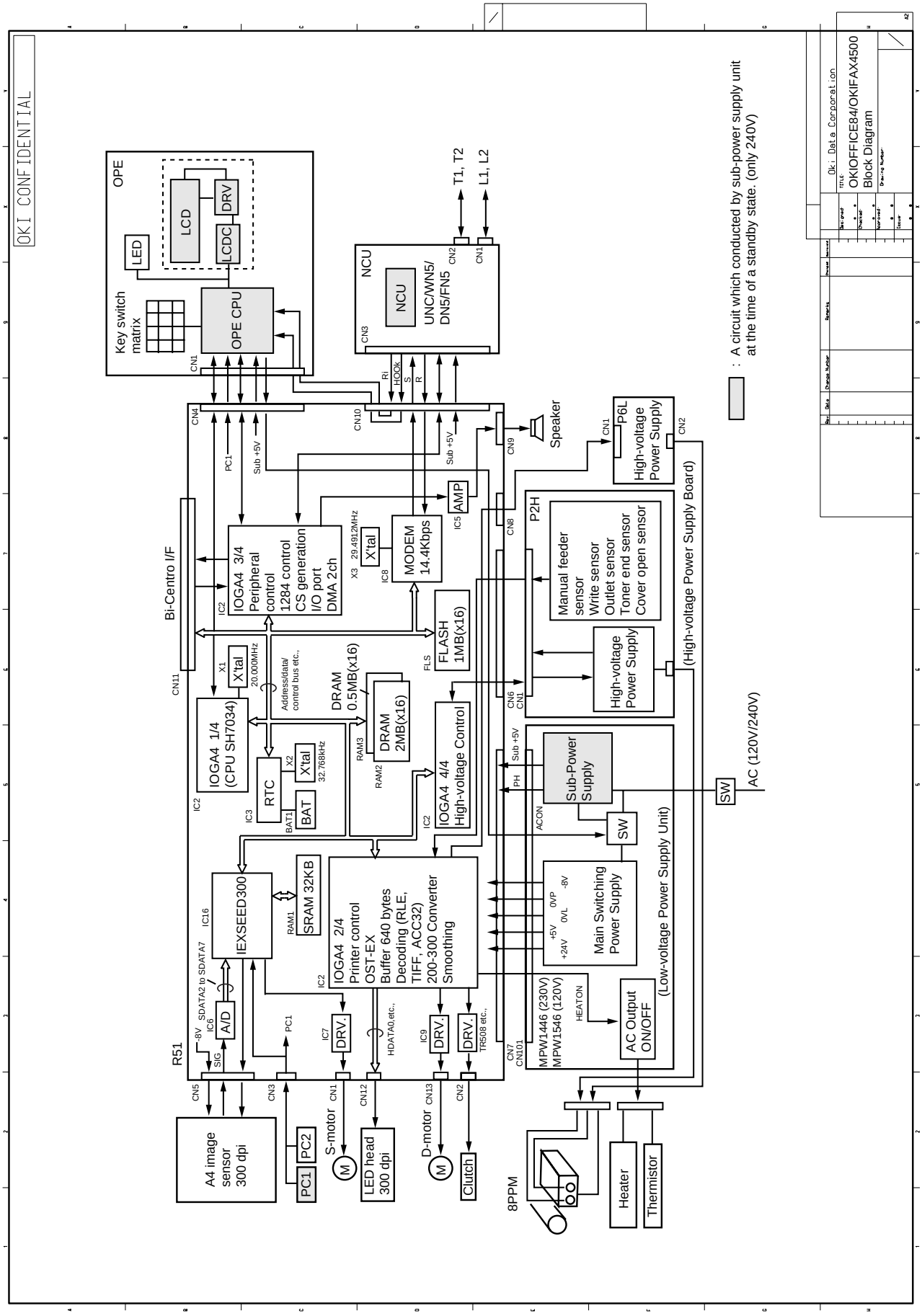
# (OKIOFFICE84, OKIFAX 4500 )

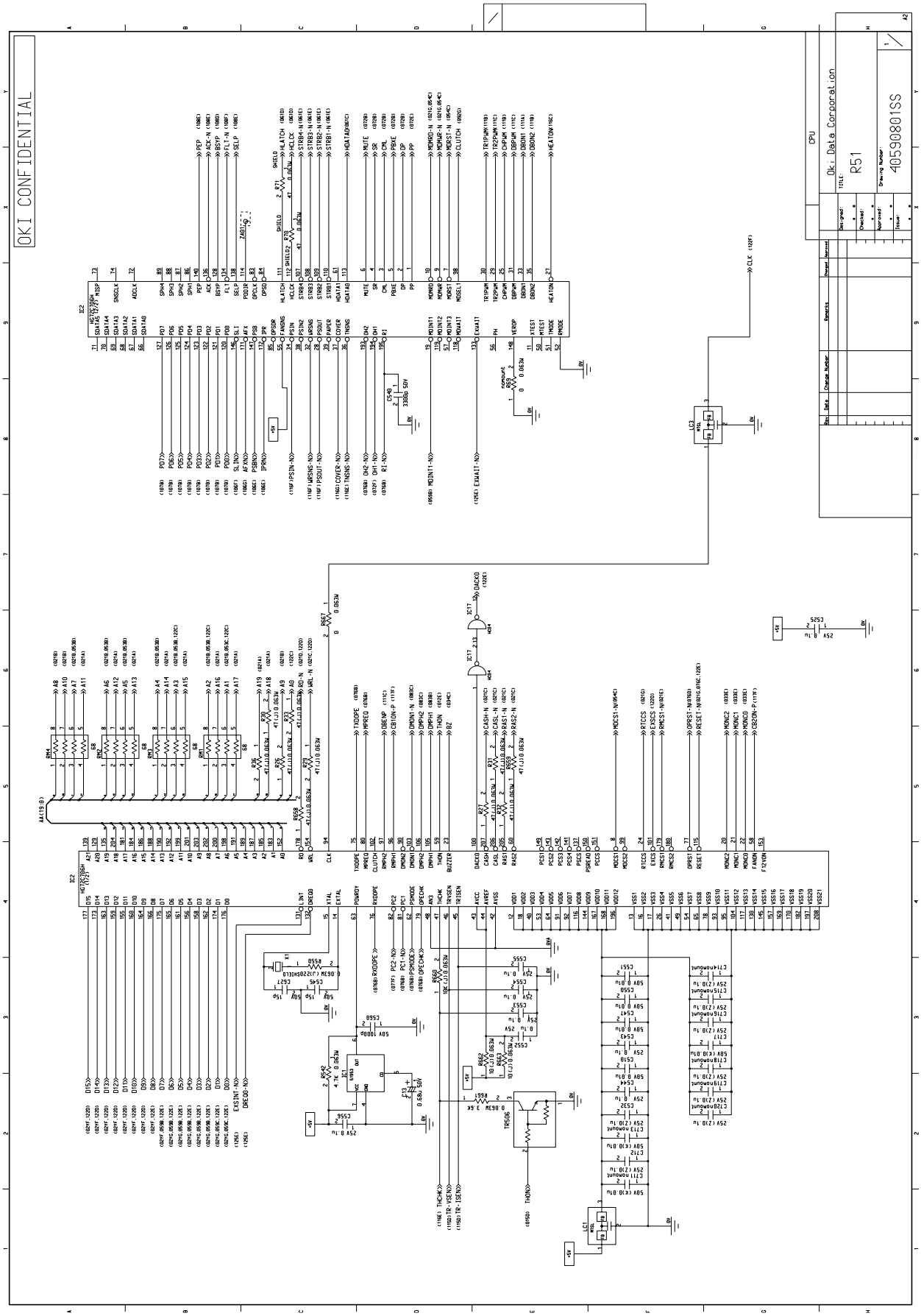
## Second Edition

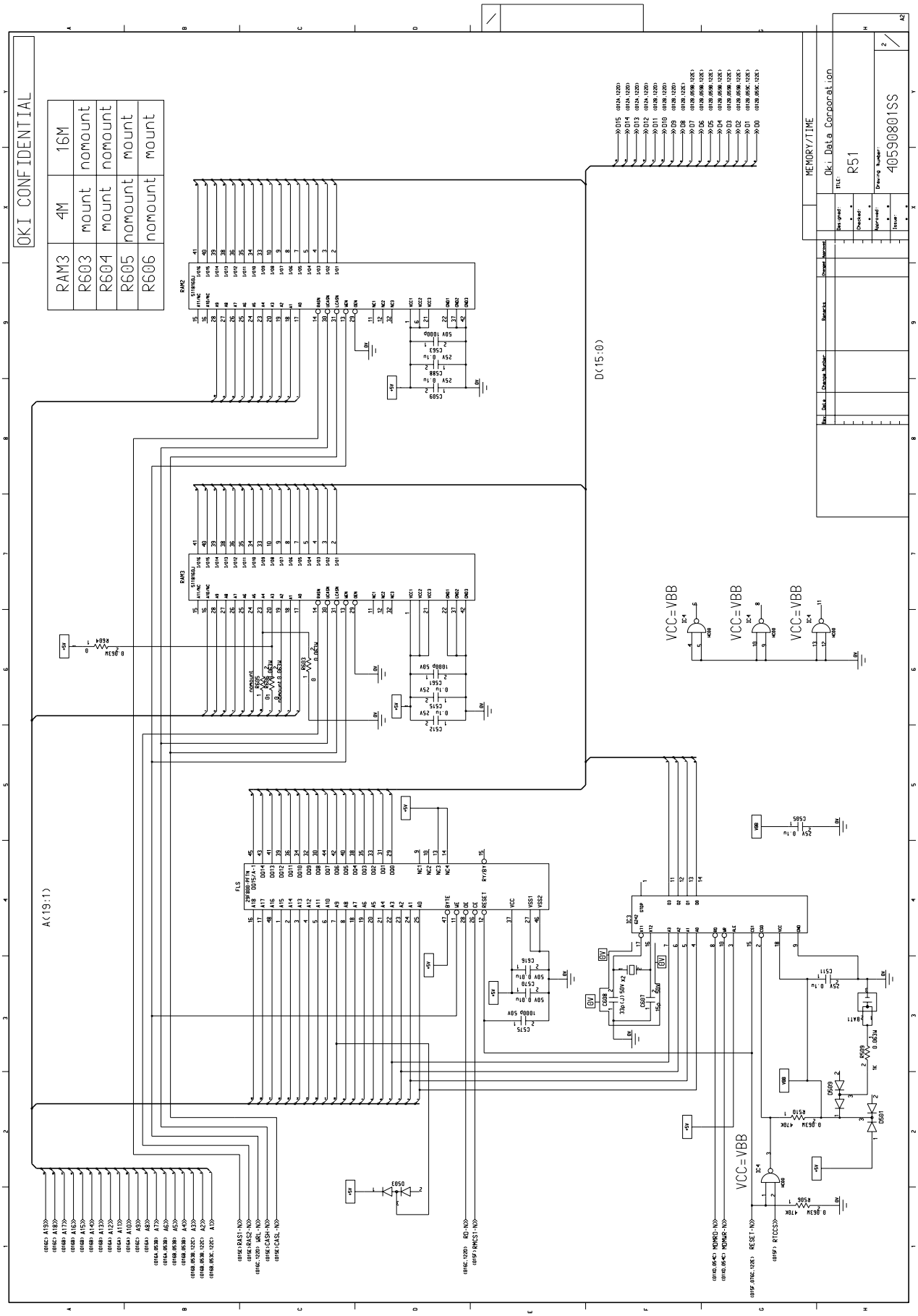
## December, 1998

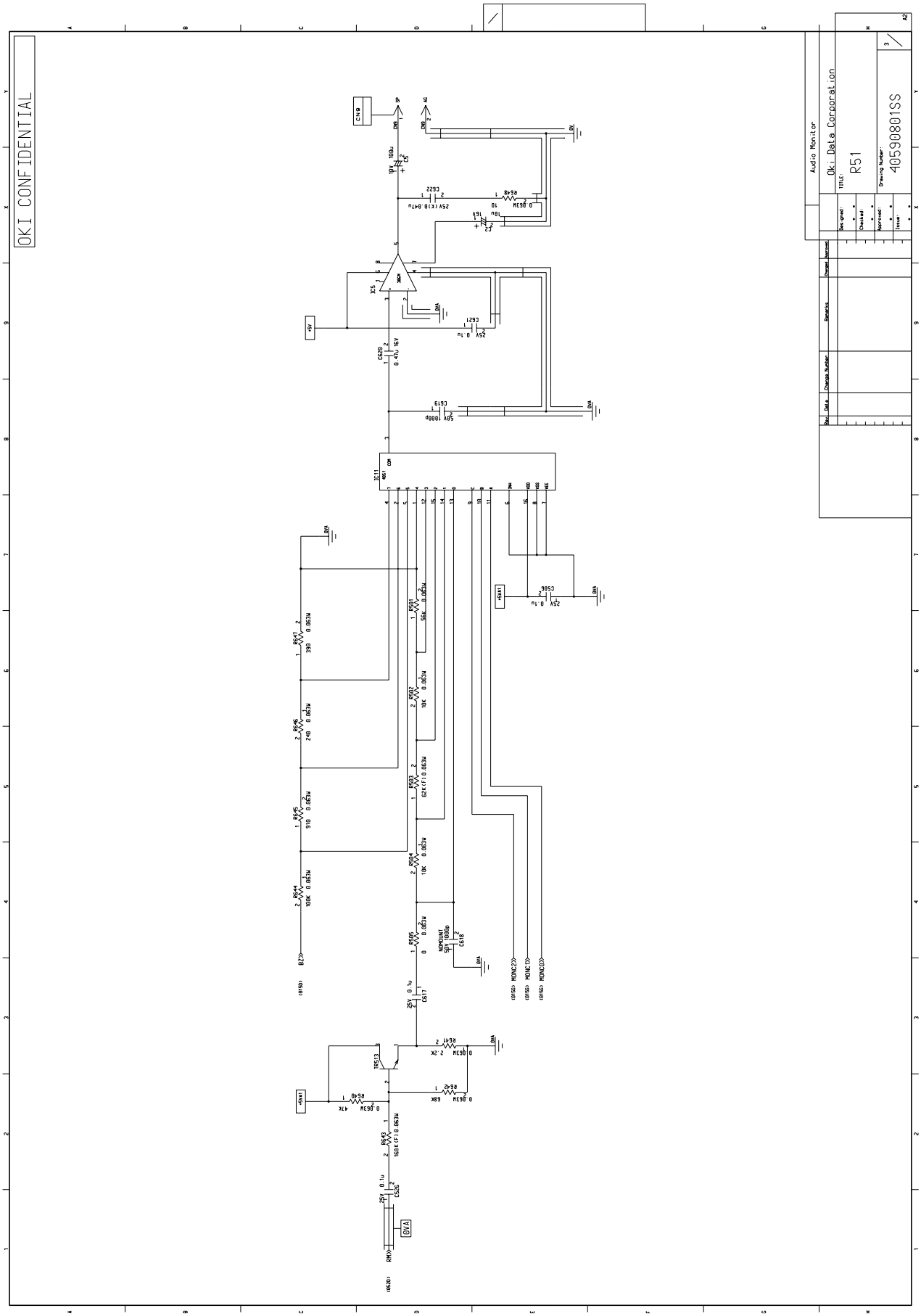
## Oki Data Corporation

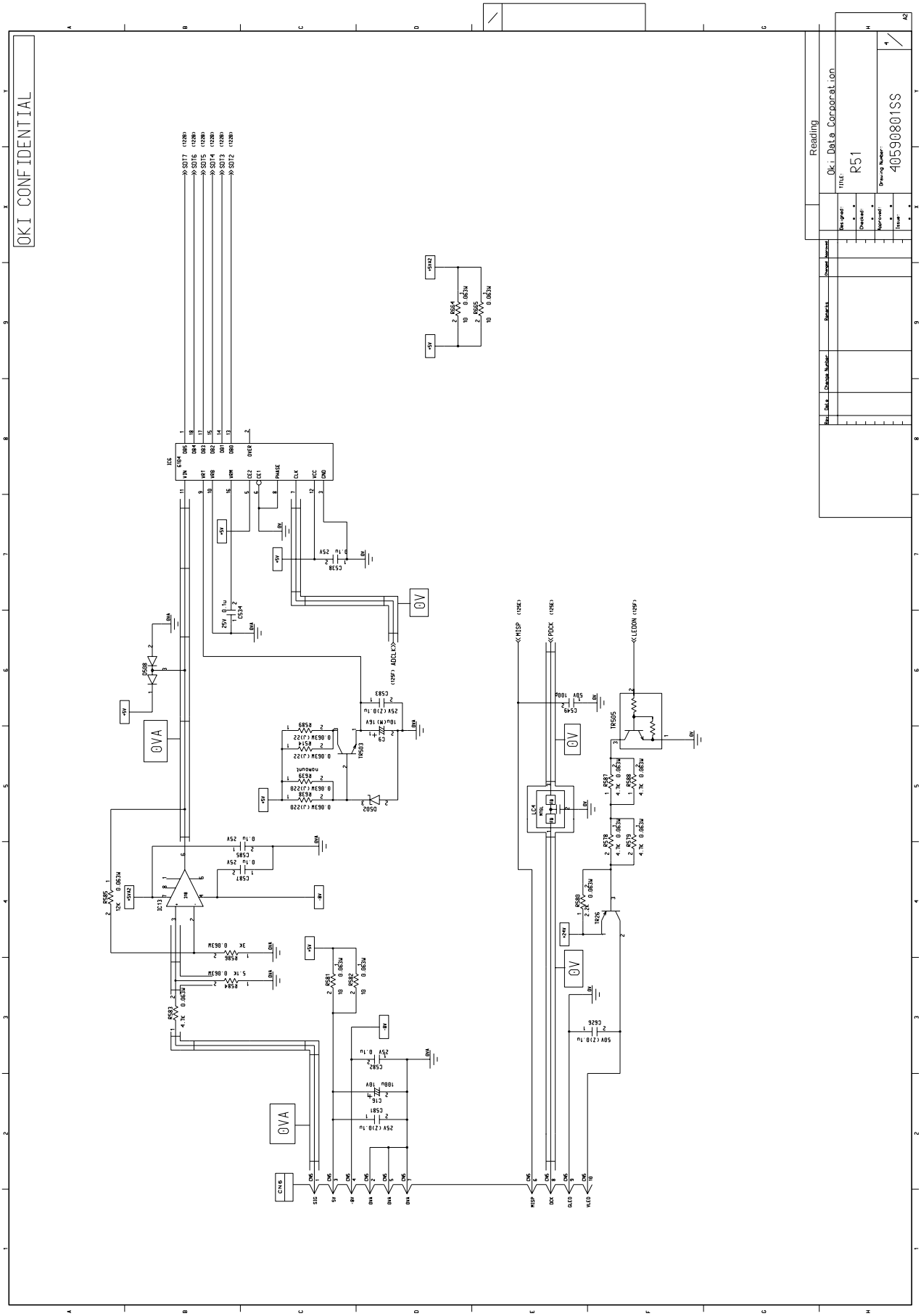
| Board Name | Drawing | Drawing No. |
|---|---|---|
| R51 (main board) | Circuit diagram | 40590801SS |
| | Parts list | 40590801BT |
| 04W (operation board) | Circuit diagram | 40071401SS |
| | Parts list | 40071401BT |
| UNC (for US) | Circuit diagram | 40002901SS |
| | Parts list | 40002902BT |
| WN5 (for OEL-INT, OKI-INT) | Circuit diagram | 40003001SS |
| | Parts list | 40003001BT |
| DN5 (for GER) | Circuit diagram | 40003101SS |
| | Parts list | 40003101BT |
| FN5 (for UK, FRANCE) | Circuit diagram | 40003201SS |
| | Parts list | 40003201BT |
| POW (120VAC) (for OKIOFFICE84) | Circuit diagram | SIPS1303 |
| | Parts list | MPW1546 |
| POW (230VAC) (for OKIFAX 4500) | Circuit diagram | SIPS1302 |
| | Parts list | MPW1446 |
| P2H (HV) | Circuit diagram | 40599101SS |
| | Parts list | 40599101BT |
| P6L (Sub) | Circuit diagram | 40386701SS |
| | Parts list | 40386701BT |

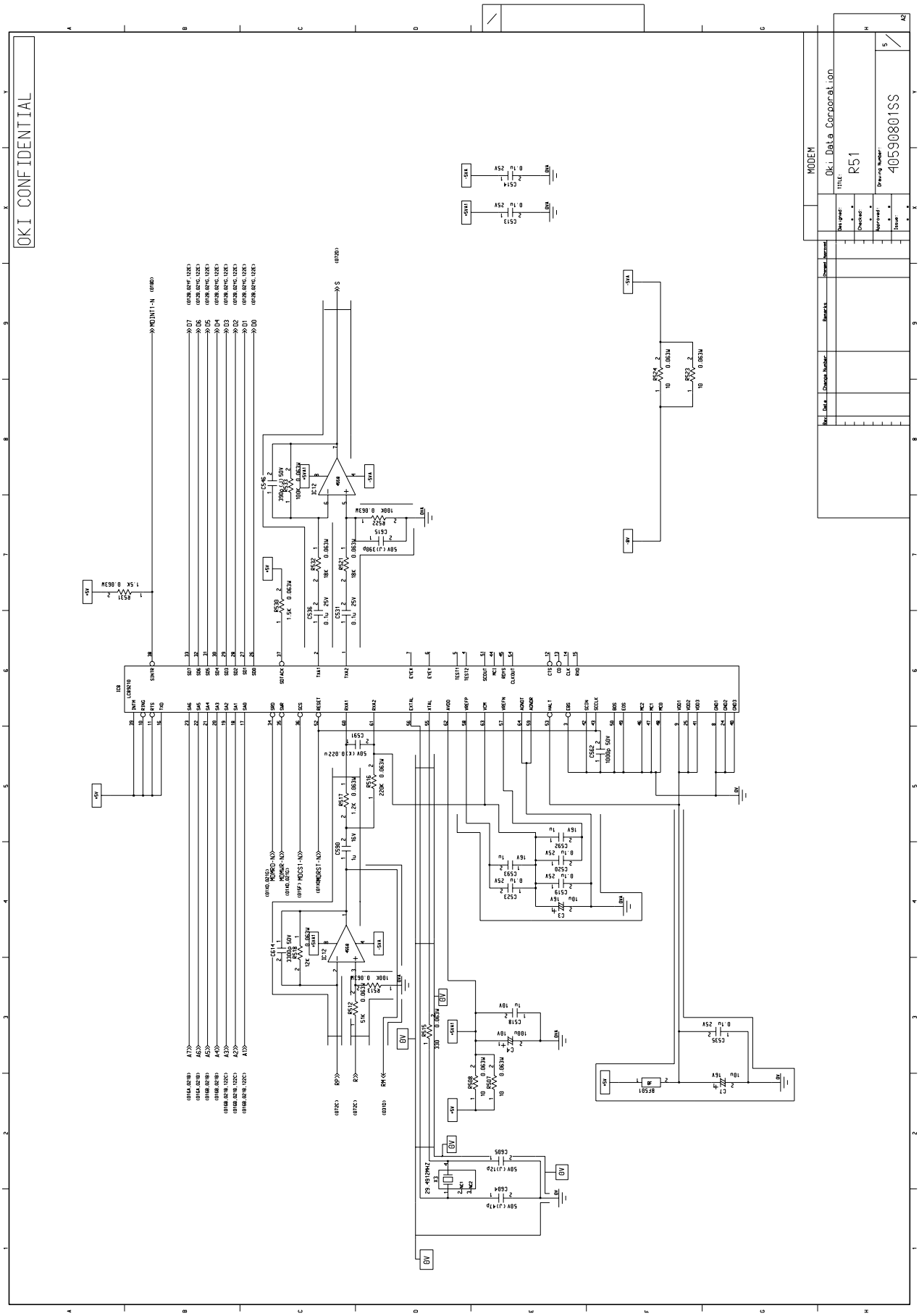

OKI CONFIDENTIAL
OPE
LED
LCD
DRV
LCDC
Key switch matrix
OPE CPU
CN1
NCU
NCU
UNC/WN5/ DN5/FN5
CN3
CN2
CN1
T1, T2
L1, L2
Ri
HOOK
S
R
CN10
CN4
PC1
Sub +5V
CN9
Speaker
CN1
P6L
High-voltage Power Supply
CN2
Bi-Centro I/F
CN11
IC2
IOGA4 3/4 Peripheral control 1284 control CS generation I/O port DMA 2ch
X3 29.4912MHz
X'tal
IC8
MODEM 14.4Kbps
IC5
AMP
CN8
P2H
Manual feeder sensor
Write sensor
Outlet sensor
Toner end sensor
Cover open sensor
X1
X'tal
20.000MHz
Address/data/ control bus etc.,
DRAM 0.5MB(x16)
FLS
FLASH 1MB(x16)
High-voltage Power Supply
CN6
CN1
(High-voltage Power Supply Board)
IOGA4 1/4 (CPU SH7034)
IC2
RTC
IC3
X2
X'tal
32.768kHz
BAT1
BAT
RAM3
DRAM 2MB(x16)
RAM2
IOGA4 4/4 High-voltage Control
IC2
Sub +5V
PH
Sub-Power Supply
ACON
SW
SW
AC (120V/240V)
IEXSEED300
IC16
RAM1
SRAM 32KB
IOGA4 2/4 Printer control OST-EX Buffer 640 bytes Decoding (RLE, TIFF, ACC32) 200-300 Converter Smoothing
IC2
Main Switching Power Supply
+5V
+24V
0VP
0VL
-8V
-8V
SDATA2 to SDATA7
IC6
A/D
SIG
PC1
IC7
DRV.
HDATA0,etc.,
IC9
DRV.
DRV.
TR508 etc.,
CN7
CN101
MPW1446 (230V)
MPW1546 (120V)
HEATON
AC Output ON/OFF
(Low-voltage Power Supply Unit)
R51
CN5
CN3
CN1
CN12
CN13
CN2
A4 image sensor 300 dpi
PC1
PC2
S-motor
M
LED head 300 dpi
D-motor
M
Clutch
8PPM
Heater
Thermistor
: A circuit which conducted by sub-power supply unit at the time of a standby state. (only 240V)
Oki Data Corporation
TITLE
OKIOFFICE84/OKIFAX4500
Block Diagram

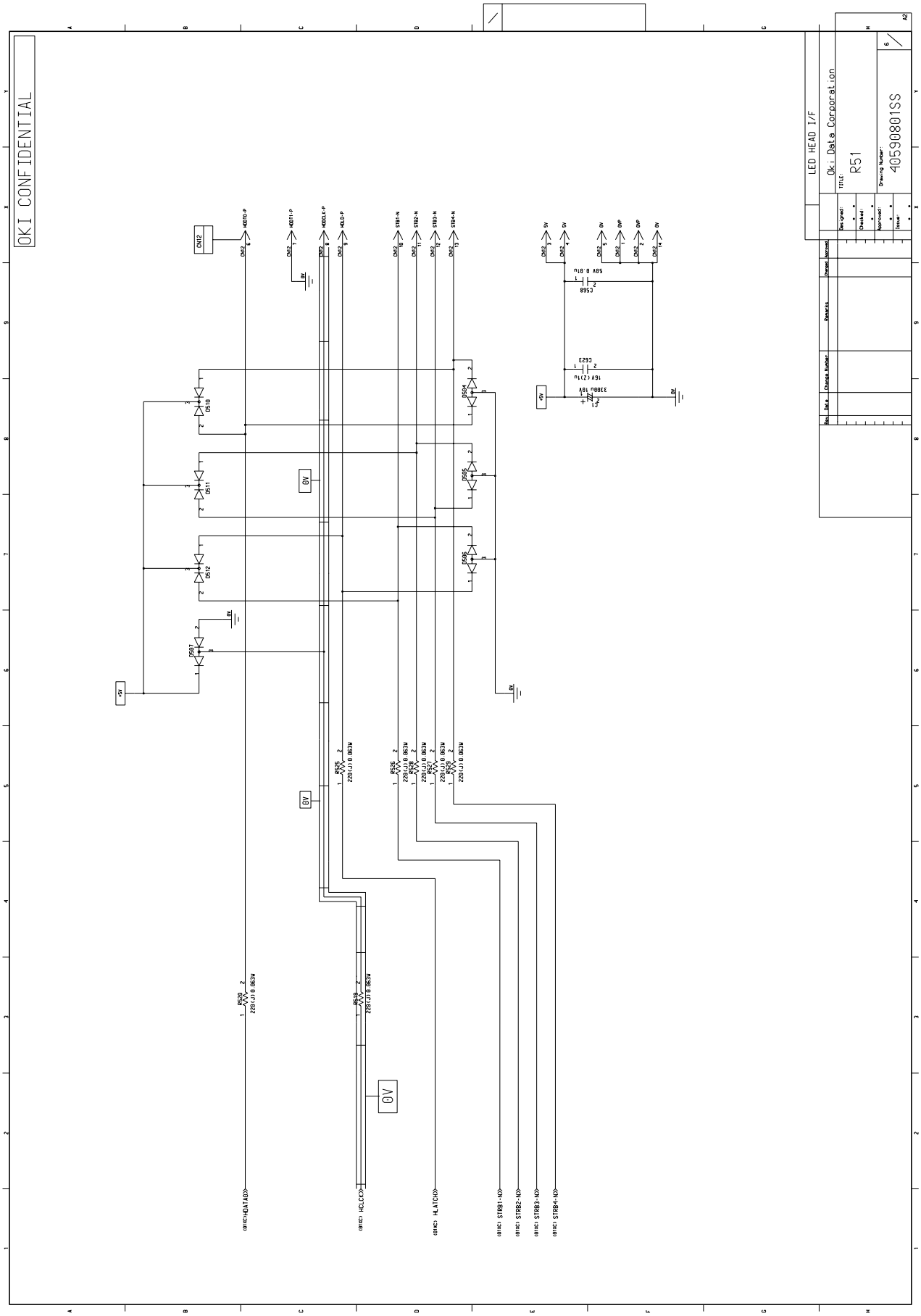

OKI CONFIDENTIAL
CPU
Oki Data Corporation
RS1
40590801SS

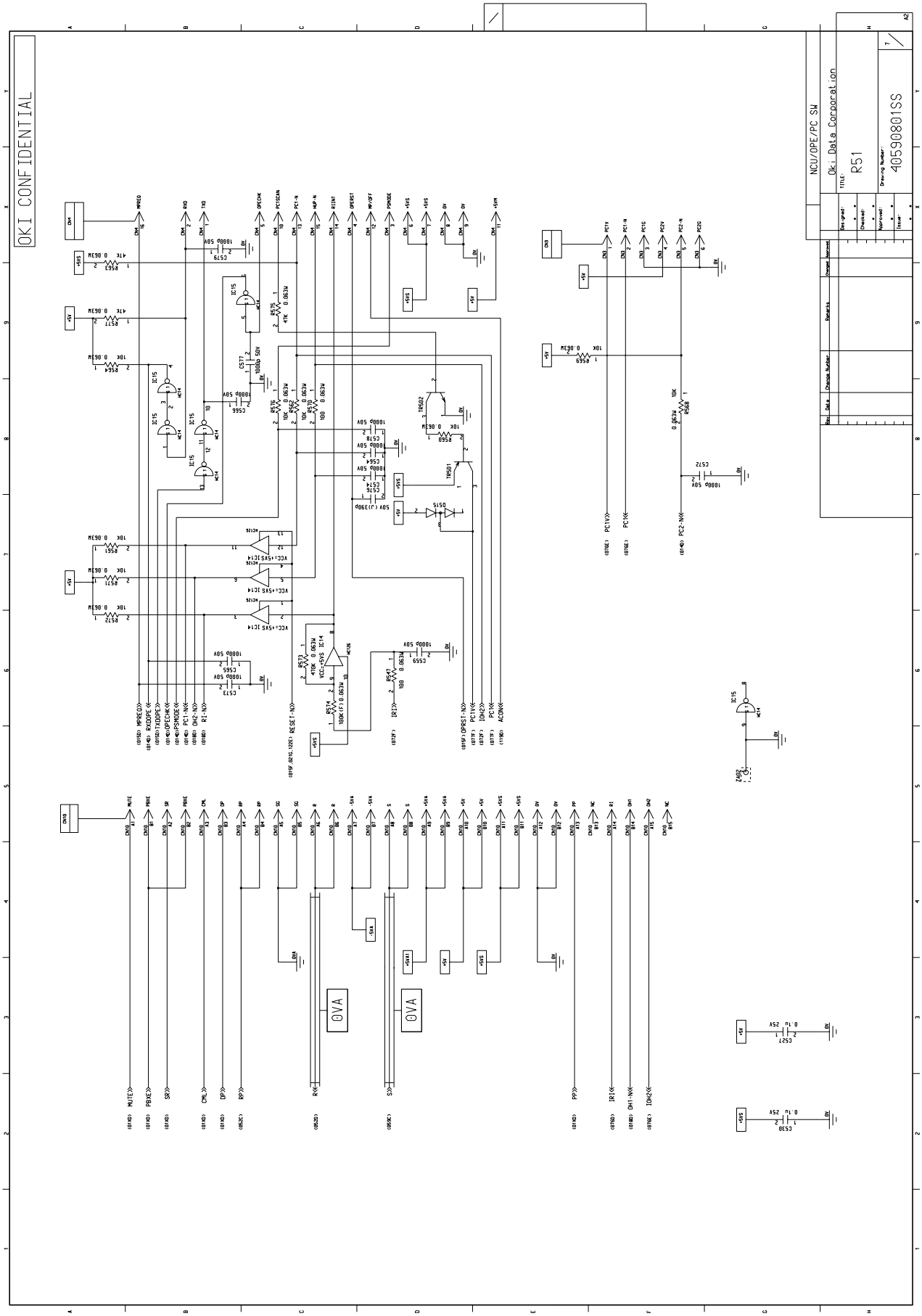

OKI CONFIDENTIAL
RAM3 4M 16M
R603 mount nomount
R604 mount nomount
R605 nomount mount
R606 nomount mount
MEMORY/TIME
Oki Data Corporation
FILE: R51
Drawing Number: 40590801SS
A(19:1)
D(15:0)
VCC=VBB

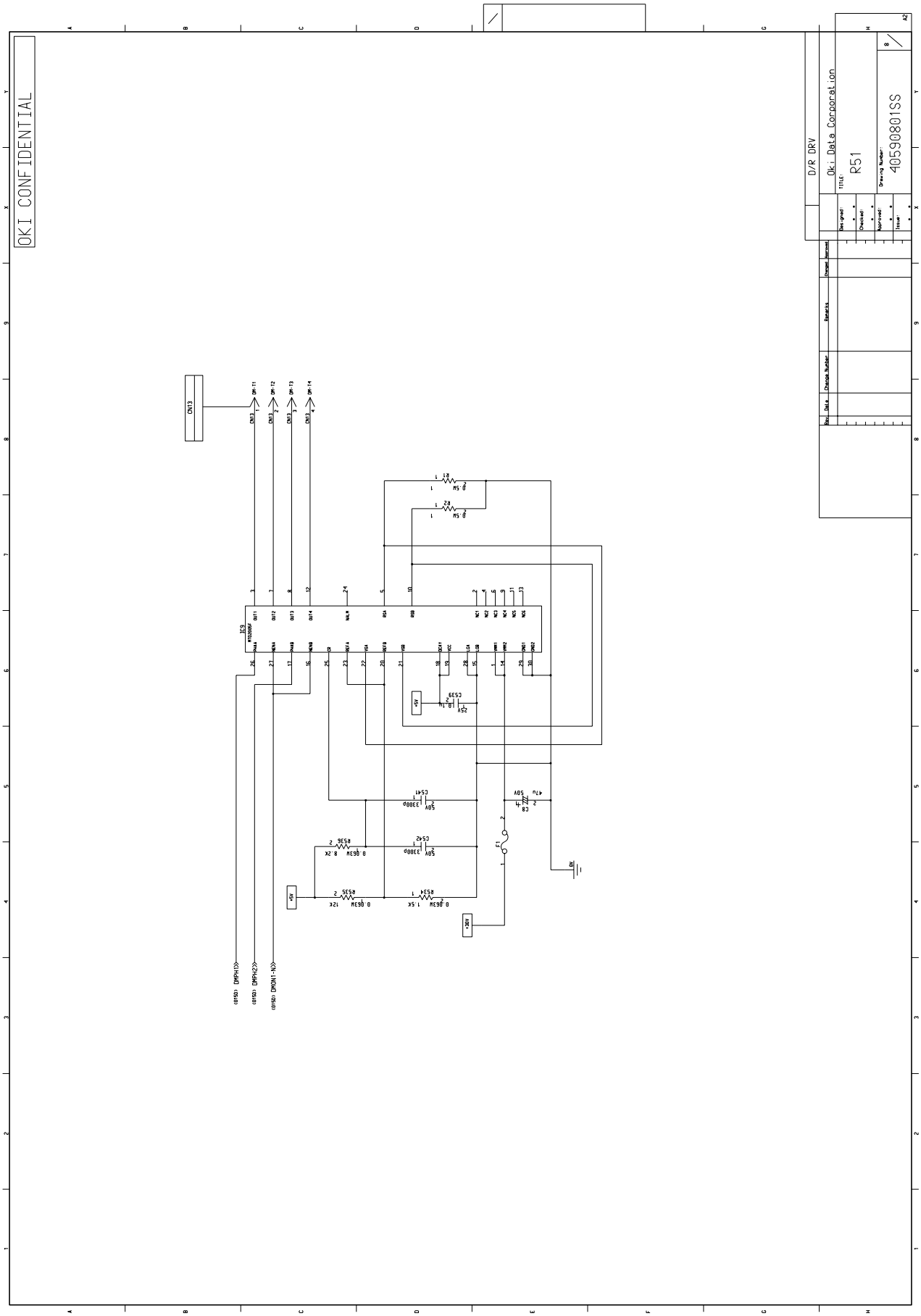

OKI CONFIDENTIAL
Audio Monitor
Oki Data Corporation
R51
4059080ISS

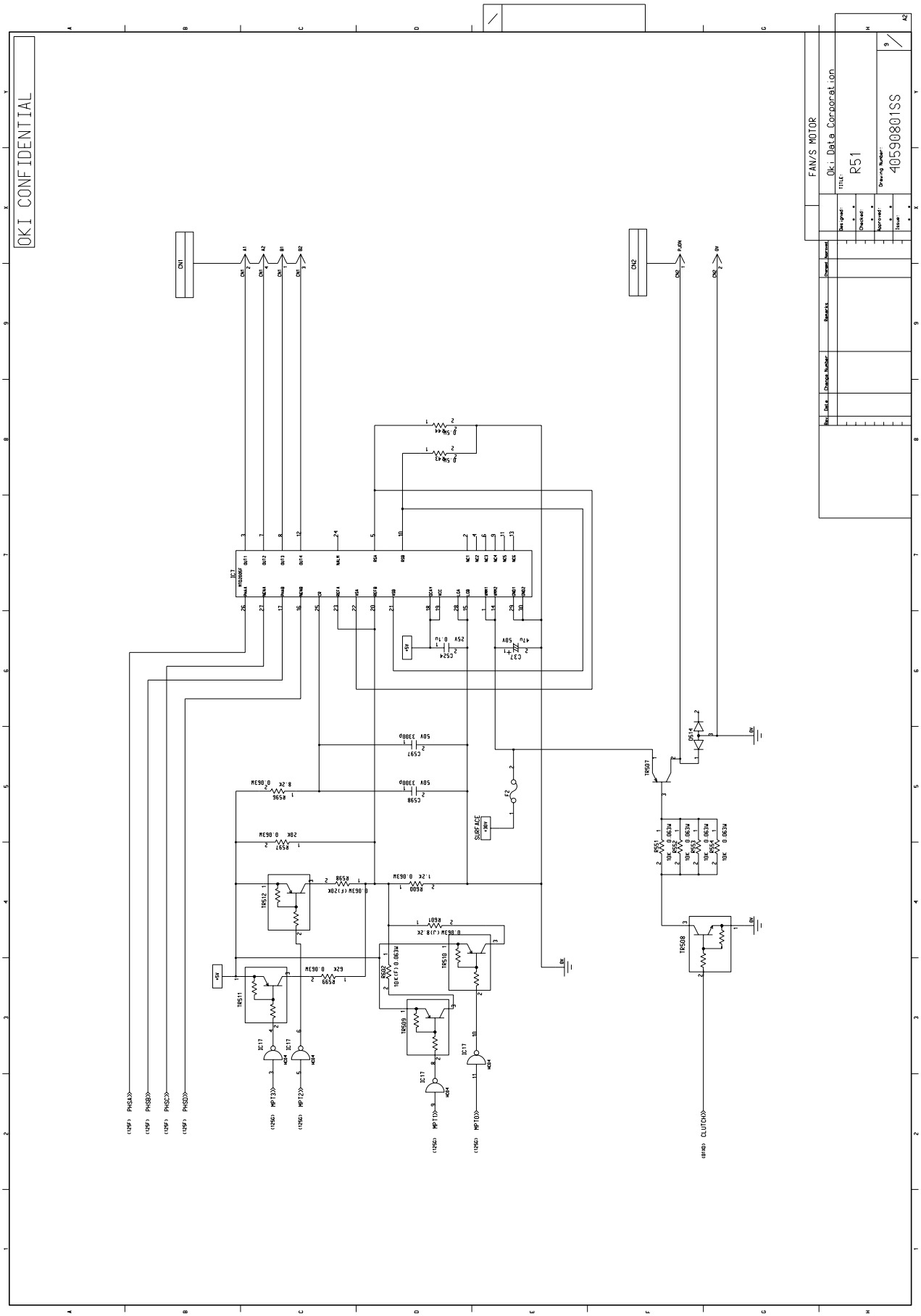

OKI CONFIDENTIAL
Reading
Oki Data Corporation
title:
R51
Drawing Number:
405908018S
Design:
Checked:
Approved:
Issue:
Rev.
Date
Change Number
Remarks
Drawn
Approved
0VA
0V
+5V
+24V
+5VA2
-5V
-8V
IC13
IC14
TR503
TR505
TR504
DS08
DS02
LCK
MHL
CN18
(12SE)
(12SF)
ADCLK
MISP
PDCK
KLEDON
SIG
SI
RN
WR
RD
MISP
DCK
CLED
VLED

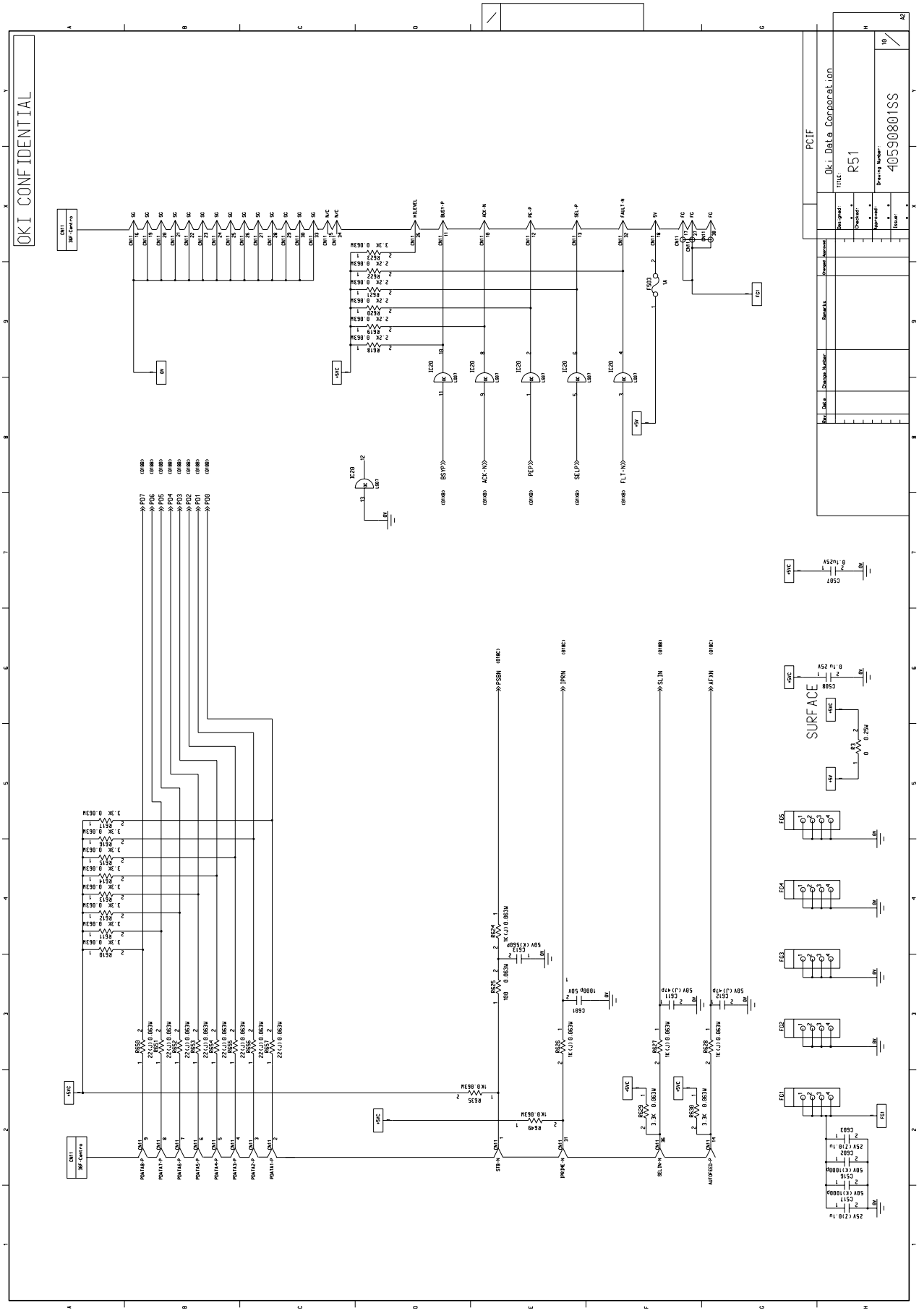

OKI CONFIDENTIAL
MODEM
Oki Data Corporation
TITLE: R51
Drawing Number: 40590801SS
Sheet: 5
Size: A2
LC89810
MDINT1-N
MDMDR-N
MDSCS1-N
MDSCK
MDSD
MDRD
MDRS
MDRST
MDCS
MDWR
MDRD
MDRST
MDCS
MDWR
MDSCK
MDSD
MDRD
MDRS
MDCS1-N
MDMDR-N
MDINT1-N
+5V
0V
-5V
+5VA
-5VA
VBAT
RP
RM
RD
X3
29.491200MHz

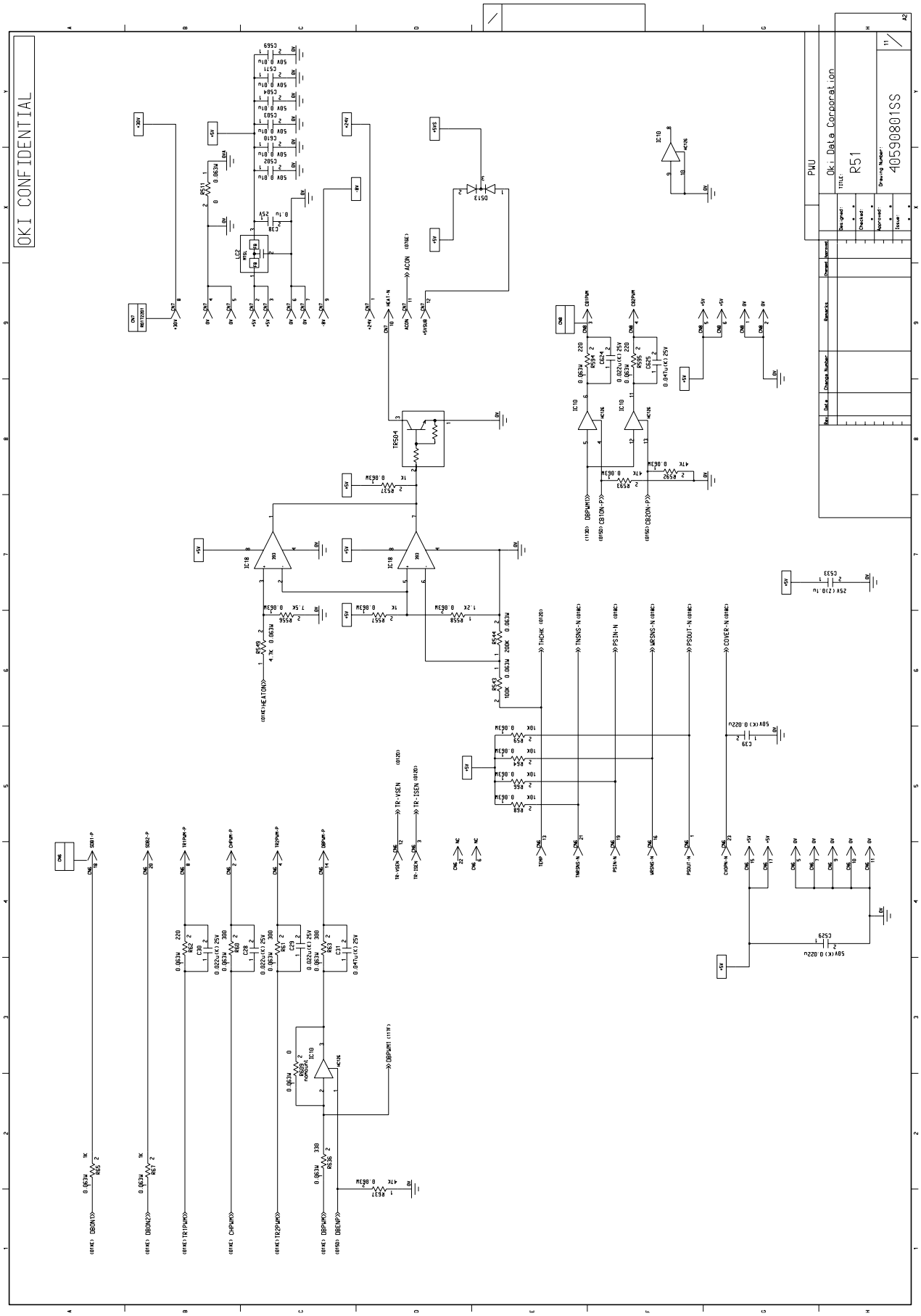

OKI CONFIDENTIAL
LED HEAD I/F
Oki Data Corporation
R51
4059801SS

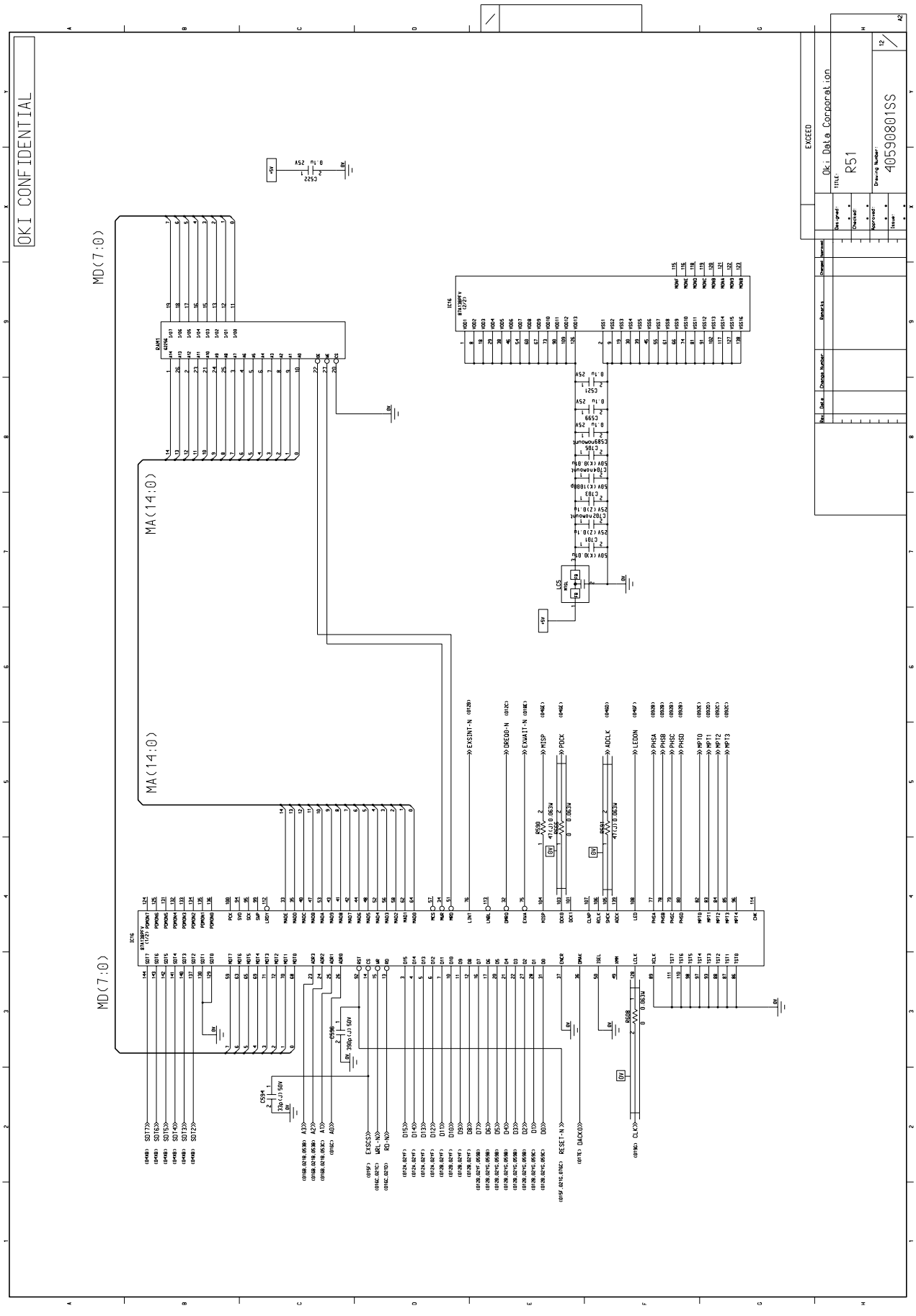

OKI CONFIDENTIAL
MCU/OPE/PC SW
Oki Data Corporation
TITLE:
R51
Drawing Number:
40590801SS
Issue:
Approved:
Checked:
Designed:
Remarks
Change Reference
Change Number
Date
By
OVA
OVA


OKI CONFIDENTIAL
D/R DRV
Oki Data Corporation
R51
40590801SS
CN13
IC9
R1
R2
C539
C541
C542
C8
F1
R534
R535
R536
+5V
+30V
(DISP) DMPH1
(DISP) DMPH2
(DISP) DMON1-10


OKI CONFIDENTIAL
FAN/S MOTOR
Oki Data Corporation
R51
4059080ISS
CN1
CN2
IC2
PHASA
PHASB
PHASC
PHASD
CLUTCH
SURFACE


OKI CONFIDENTIAL
PCIF
Oki Data Corporation
TITLE:
R51
Drawing Number:
405308015S
SURFACE


OKI CONFIDENTIAL
Oki Data Corporation
PWU
R51
4059080ISS


OKI CONFIDENTIAL
MD(7:0)
MA(14:0)
EXCEED
Oki Data Corporation
R51
40590801SS

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40590899 | PCB - R51 | 1 | |
| | | | | | |
| | D504 - D506, D514 | 611A0000N0001 | SS100MA80VACP<br>D-Signal -C | 4 | |
| | D510 - D512 | 611A0000N0002 | SS100MA80VKCP<br>D-Signal -C | 3 | |
| | D503, D507, D508, D509 | 611A0000N0003 | SS100MA80VSCP<br>D-Signal | 5 | |
| | D515 | | | | |
| | D502 | 613A0233M0092C | RD4.3M-B3<br>D-Zener -C | 1 | |
| | D501, D513 | 6110225N0001 | 1SS392 (TE85R)<br>D-Signal -C | 2 | |
| | | | | | |
| | R3 | 3213421P0001 | 16ZM5-5<br>RES-Zero ‰ -P | 1 | |
| | R557 | 3235003F0102 | CR/RK73H/ERJ/MCRF102<br>RES-MET RN -C | 1 | |
| | R502, R504, R560, R602 | 3235003F0103 | CR/RK73H/ERJ/MCRF103<br>RES-MET RN -C | 4 | |
| | R513, R522, R533, R543 | 3235003F0104 | CR/RK73H/ERJ/MCRF104<br>RES-MET RN -C | 6 | |
| | R574, R644 | | | | |
| | R517, R558 R600 | 3235003F0122 | CR/RK73H/ERJ/MCRF122<br>RES-MET RN -C | 3 | |
| | R518, R535 R585 | 3235003F0123 | CR/RK73H/ERJ/MCRF123<br>RES-MET RN -C | 3 | |
| | R534 | 3235003F0152 | CR/RK73H/ERJ/MCRF152<br>RES-MET RN -C | 1 | |
| | R643 | 3235003F0164 | CR/RK73H/ERJ/MCRF164<br>RES-MET RN -C | 1 | |
| | R521, R532 | 3235003F0183 | CR/RK73H/ERJ/MCRF183<br>RES-MET RN -C | 2 | |
| | R597, R598 | 3235003F0203 | CR/RK73H/ERJ/MCRF203<br>RES-MET RN -C | 2 | |
| | R544 | 3235003F0204 | CR/RK73H/ERJ/MCRF204<br>RES-MET RN -C | 1 | |
| | R646 | 3235003F0241 | CR/RK73H/ERJ/MCRF241<br>RES-MET RN -C | 1 | |
| | R586 | 3235003F0302 | CR/RK73H/ERJ/MCRF302<br>RES-MET RN -C | 1 | |
| | R661 | 3235003F0362 | CR/RK73H/ERJ/MCRF362<br>RES-MET RN -C | 1 | |
| | R647 | 3235003F0391 | CR/RK73H/ERJ/MCRF391<br>RES-MET RN -C | 1 | |
| | R583 | 3235003F0472 | CR/RK73H/ERJ/MCRF472<br>RES-MET RN -C | 1 | |
| | R584 | 3235003F0512 | CR/RK73H/ERJ/MCRF512<br>RES-MET RN -C | 1 | |
| | R512 | 3235003F0513 | CR/RK73H/ERJ/MCRF513<br>RES-MET RN -C | 1 | |

| | |
|---|---|
| issued: June 1998<br>DCO No. SR7-0120 | PCB Assy- R51 |
| | 40590801BT - 1/7 |
| Oki Data Corporation | JAPAN |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | R501 | 3235003F0563 | CR/RK73H/ERJ/MCRF563<br>RES-MET RN -C | 1 | |
| | R599, R503 | 3235003F0623 | CR/RK73H/ERJ/MCRF623<br>RES-MET RN -C | 2 | |
| | R645 | 3235003F0911 | CR/RK73H/ERJ/MCRF911<br>RES-MET RN -C | 1 | |
| | R507, R508,<br>R523, R524, | 3235003J0100 | CR/RK73K/ERJ/MCRJ100<br>RES-MET RN -C | 11 | |
| | R581, R582,<br>R648, | | | | |
| | R662 - R665 | | | | |
| | R547, R570,<br>R625 | 3235003J0101 | CR/RK73K/ERJ/MCRJ101<br>RES-MET RN -C | 3 | |
| | R65, R67,<br>R509, R537, | 3235003J0102 | CR/RK73K/ERJ/MCRJ102<br>RES-MET RN -C | 10 | |
| | R624,<br>R626 - R628, | | | | |
| | R635, R649 | | | | |
| | R59, R64,<br>R66, R68, | 3235003J0103 | CR/RK73K/ERJ/MCRJ103<br>RES-MET RN -C | 17 | |
| | R551 - R554,<br>R561, R562, | | | | |
| | R564, R568,<br>R569, R571, | | | | |
| | R572, R576,<br>R660 | | | | |
| | R530, R531 | 3235003J0152 | CR/RK73K/ERJ/MCRJ152<br>RES-MET RN -C | 2 | |
| | R514, R589,<br>R650 - R657 | 3235003J0220 | CR/RK73K/ERJ/MCRJ220<br>RES-MET RN -C | 10 | |
| | R62, R519,<br>R520, | 3235003J0221 | CR/RK73K/ERJ/MCRJ221<br>RES-MET RN -C | 12 | |
| | R525 - R529,<br>R550, R594, | | | | |
| | R595, R638 | | | | |
| | R580<br>R618 - R622, | 3235003J0222 | CR/RK73K/ERJ/MCRJ222<br>RES-MET RN -C | 7 | |
| | R641 | | | | |
| | R516 | 3235003J0224 | CR/RK73K/ERJ/MCRJ224<br>RES-MET RN -C | 1 | |
| | R60, R61, R63 | 3235003J0301 | CR/RK73K/ERJ/MCRJ301<br>RES-MET RN -C | 3 | |
| | R515, R636 | 3235003J0331 | CR/RK73K/ERJ/MCRJ331<br>RES-MET RN -C | 2 | |
| | R610 - R617,<br>R623, R629, | 3235003J0332 | CR/RK73K/ERJ/MCRJ332<br>RES-MET RN -C | 11 | |
| | R630 | | | | |
| | | | | | |
| | | | | | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | R26, R27,<br>R29 - R33, | 3235003J0470 | CR/RK73K/ERJ/MCRJ470<br>RES-MET RN -C | 14 | |
| | R36, R70, R71<br>R590, R591 | | | | |
| | R658,R659 | | | | |
| | R542, R549,<br>R578, R579, | 3235003J0472 | CR/RK73K/ERJ/MCRJ472<br>RES-MET RN -C | 6 | |
| | R587, R588 | | | | |
| | R563, R575,<br>R577, R592, | 3235003J0473 | CR/RK73K/ERJ/MCRJ473<br>RES-MET RN -C | 7 | |
| | R593, R637,<br>R640 | | | | |
| | R506, R510,<br>R573 | 3235003J0474 | CR/RK73K/ERJ/MCRJ474<br>RES-MET RN -C | 3 | |
| | R642 | 3235003J0683 | CR/RK73K/ERJ/MCRJ683<br>RES-MET RN -C | 1 | |
| | R556 | 3235003J0752 | CR/RK73K/ERJ/MCRJ752<br>RES-MET RN -C | 1 | |
| | R536, R596,<br>R601 | 3235003J0822 | CR/RK73K/ERJ/MCRJ822<br>RES-MET RN -C | 3 | |
| | R1, R2 | 324A1001J0109 | MSF1/2B1 ‰J<br>RES-MET 0X | 2 | 4KH-31051-152 |
| | R43, R44 | 324A1001J0209 | MSF1/2B2 ‰J<br>RES-MET 0X | 2 | 4KH-31051-152 |
| | R505, R511<br>R603, R604, | 3255003P0001 | CR/RK73Z/ERJ/MCRJ-0V<br>RES-Zero ‰ -C | 7 | |
| | R608, R666,<br>R667 | | | | |
| | RM1 - RM4 | 334A5012J0680 | MNR14ABJ680<br>RES-Block -C | 4 | |
| | | | | | |
| | C549 | 3033003C0101 | GRM/UMK/MCH/ 101CH<br>CAP-Ceramic -C | 1 | |
| | C545, C607,<br>C627 | 3033003C0150 | GRM/UMK/MCH/ 150CH<br>CAP-Ceramic -C | 3 | |
| | C516,<br>C559 - C566 | 3036003K0102 | GRM/UMK/MCH/ 102B<br>CAP-Ceramic -C | 21 | |
| | C572 - C575<br>C577 - C579 | | | | |
| | C601, C602,<br>C619, C701, | | | | |
| | C705 | | | | |
| | C502 - C504,<br>C510, C547, | 3036003K0103 | GRM/UMK/MCH/ 103B<br>CAP-Ceramic -C | 14 | |
| | C550, C551<br>C568 - C571, | | | | |
| | C610, C616<br>C717 | | | | |
| | C39, C529 | 3036003K0222 | GRM/UMK/MCH/222B<br>CAP-Ceramic -C | 2 | |
| | C540 - C542,<br>C597, C598 | 3036003K0332 | GRM/UMK/MCH/ 332B<br>CAP-Ceramic -C | 6 | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks = |
|---|---|---|---|---|---|
| | C614 | | | | |
| | C38, C505 - C509, | 3036003Z0104 | GRM/TMK/MCH/ 104Z 25V CAP-Ceramic -C | 50 | |
| | C511 - C515, C517, | | | | |
| | C519 - 527 C530 - C536, | | | | |
| | C538, C539, C543, C544, | | | | |
| | C552 - C556, C581 - C583, | | | | |
| | C585, C587, C588, C599, | | | | |
| | C603, C617, C621, C703, | | | | |
| | C712, C720 | | | | |
| | C605 | 3033003C0120 | GRM/UMK/MCH/ 120CH CAP-Ceramic -C | 3 | |
| | C546, C576, C596, C615 | 3033003C0391 | GRM/UMK/MCH/ 391CH CAP-Ceramic -C | 4 | |
| | C604, C611, C612 | 3033003C0470 | GRM/UMK/MCH/ 470CH CAP-Ceramic -C | 3 | |
| | C594, C608 | 3033003C0330 | GRM/UMK/MCH/ 330CH CAP-Ceramic -C | 2 | |
| | C613 | 3036003K0561 | GRM/UMK/MCH/ 561B 50V CAP-Ceramic -C | 1 | |
| | C590, C592, C593, | 303A6008Z1105 | CK2012F1C105Z 16V 1 F CAP-Ceramic -C | 4 | |
| | C623 | | | | |
| | C518 | 3036003Z0105 | GRM/LMK/MCH/105Z 10V CAP-Ceramic -C | 1 | |
| | C620 | 303A6008Z1474 | CK2012F1C474Z 16V CAP-Ceramic -C | 1 | |
| | C626 | 303A6008Z3104 | CK2012F1H104Z 50V CAP-Ceramic -C | 1 | |
| | C28 - C30, C624, C591 | 3036003K0223 | GRM/TMK/MCH/ 223B 25V CAP-Ceramic -C | 5 | |
| | C31, C622, C625 | 3036003K0473 | GRM/TMK/MCH/ 473B 25V CAP-Ceramic -C | 3 | |
| | C4, C5, C16 | 3041103A1101 | UVX/SME10VB-100-0A CAP-Alum(CE) -P | 3 | |
| | C2, C3, C7 C9 | 3041103C1100 | UVX/SME16VB-10-0A CAP-Alum(CE) -P | 4 | |
| | C13 | 304A1046H1688 | 50MS5-0.68M 50V CAP-Alum(CE) | 1 | |
| | C1 | 304A1137A1332 | UVS1A332MHA 10V CAP-Alum(CE) | 1 | |
| | C8, C37 | 304A1180H1470 | KMG50VB-47M-FC 50V 47 F CAP-Alum(CE) | 2 | |
| | | | | | |
| | IC20 | 700A0503N0007 | 74LS07FP Digital IC-BIP-S | 1 | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | IC16 | 7024620N2001 | MB87A138PFV-G<br>Digital IC-MOS-F | 1 | |
| | IC4 | 702A1703N0000 | 74HC00FP<br>Digital IC-MOS-S | 1 | |
| | IC17 | 702A1703N0004 | 74HC04FP<br>Digital IC-MOS-S | 1 | |
| | IC15 | 702A1703N0014 | 74HC14FP<br>Digital IC-MOS-S | 1 | |
| | IC10, IC14 | 702A1703N0126 | 74HC126FP<br>Digital IC-MOS-S | 2 | |
| | IC5 | 720A0028N0006 | NJM386M<br>Analog-BIPLIN-S | 1 | |
| | IC12 | 720A0028N0039 | NJM4558M<br>Analog-BIPLIN-S | 1 | |
| | IC13 | 720A0028N0113 | NJM318E<br>Analog-BIPLIN-S | 1 | |
| | IC18 | 720A0523N0011 | UPC393G2<br>Analog-BIPLIN-S | 1 | |
| | IC7, IC9 | 720A1816N0001 | MTD2005FB<br>Analog-BIPLIN-S | 2 | |
| | IC1 | 720A4022N0008 | M51953AFP<br>Analog-BIPLIN-S | 1 | |
| | IC11 | 731A0525N0001 | TC4051BF<br>Analog-MOS SW-S | 1 | |
| | IC8 | 7320001N0002 | LC89210-F07<br>Analog-MOSdata-F | 1 | |
| | IC6 | 7320040N0001 | SM6104S1<br>Analog-MOSdata-S | 1 | |
| | RAM3 | 8020003N2604 | 514265JP-60<br>Memory-MOSDRAM-S | 1 | |
| | RAM2 | 8020003N4613 | 5118160JP-60<br>Memory-MOSDRAM-S | 1 | |
| | RAM1 | 8040003N8303 | 52256CN-70LL<br>Memory-MOSSRAM-S | 1 | |
| | FLS | 40774701 | FLASH MEM. IC | 1 | |
| | IC2 | 8530433N0002 | HG72C706H02FD<br>CPU-MOS (ROM) -F | 1 | |
| | IC3 | 855A0424F0034 | MSM6242RS<br>CPU-Interface - | 1 | |
| | | | | | |
| | LC3 | 342A1013K0330 | MT-SL330KB<br>COMP PAR-LC - | 1 | |
| | LC1, LC2, LC5 | 342A1013N0223 | MT-Y223NB<br>COMP PAR-LC - | 3 | |
| | LC4 | 3421001P0271 | MT-B271KBTBM<br>COMP PAR-LC -P | 1 | |
| | TR509-TR512 | 600A1003N0003 | A1344/UN2111/DTA114K<br>TR-PNP/H FREQ -C | 4 | |
| | TR501 | 600A1025M0017Y | 2SA1162-Y<br>TR-PNP/H FREQ -C | 1 | |
| | TR507 | 600A1032N0010 | 2SA1338<br>TR-PNP/H FREQ -C | 1 | |
| | TR26 | 600A1125M0011Y | 2SA950-Y<br>TR-PNP/H FREQ - | 1 | 4LH-31420 |

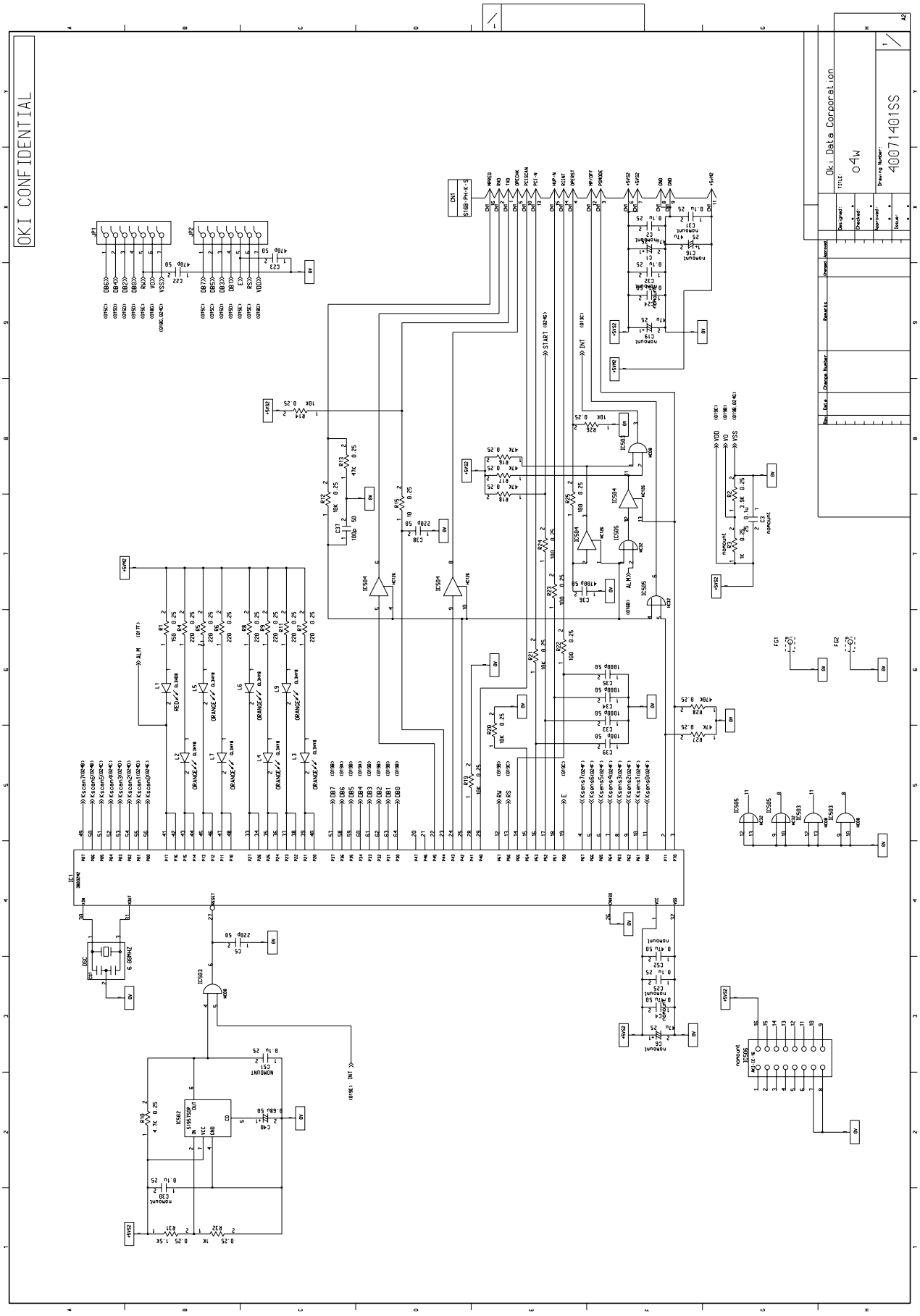
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| issued: June 1998<br>DCO No. SR7-0120 | PCB Assy- R51 |
| | 40590801BT - 5/7 |
| Oki Data Corporation | JAPAN |

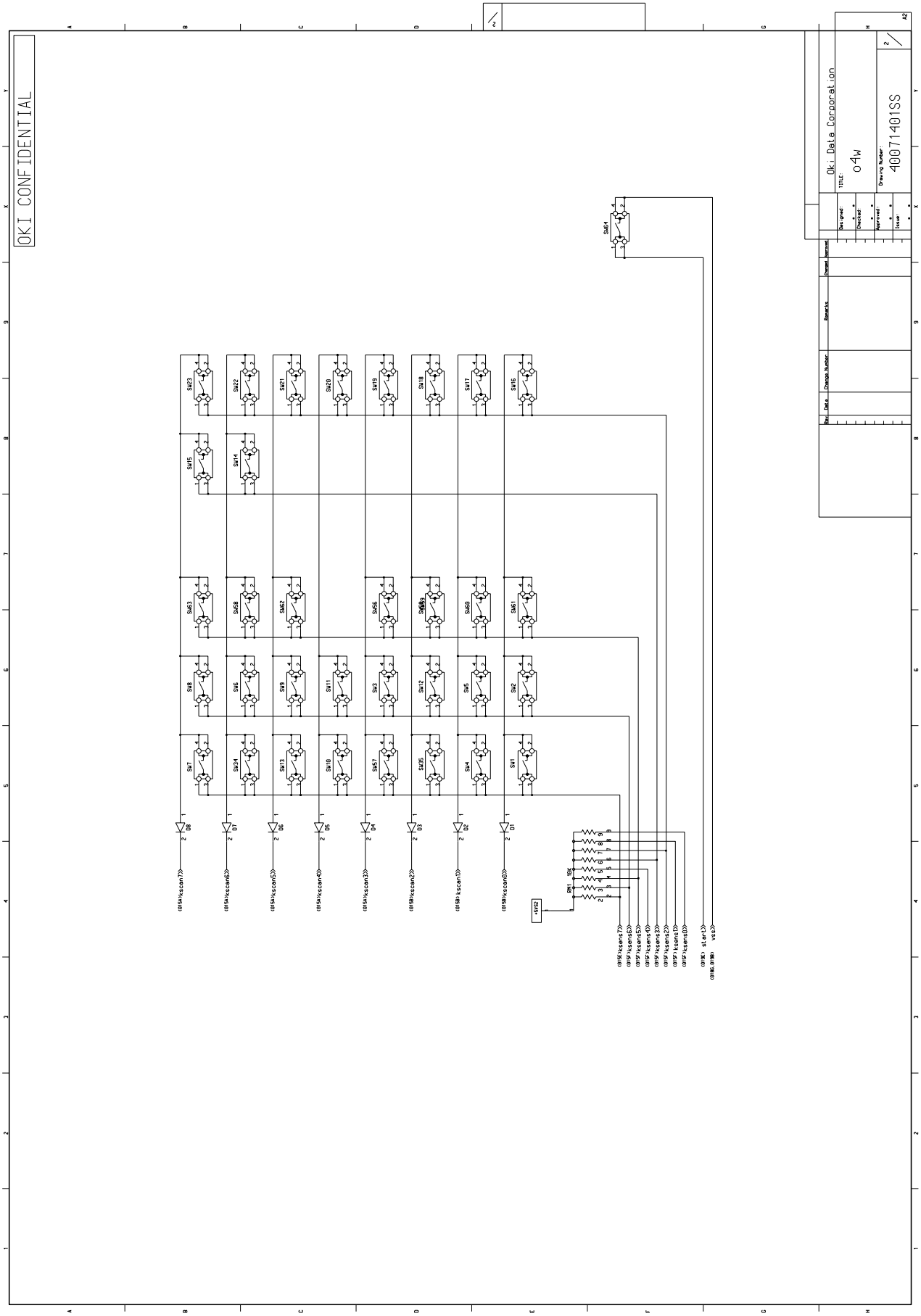
| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | TR502,TR503,<br>TR513 | 602A1025M0033 | 2SC2712-Y/G<br>TR-NPN/H-FREQ -C | 3 | |
| | TR504,TR505,<br>TR508 | 602A1035N0004 | DTC124EK<br>TR-NPN/H-FREQ -C | 3 | |
| | TR506 | 602A1035N0019 | DTC123YK<br>TR-NPN/H-FREQ -C | 1 | |
| | | | | | |
| | CN11 | 2201001P0360 | 57RE-40360-830B-D29<br>Connector-SQR - | 1 | |
| | CN7 | 2244100P0120 | 12JQ-ST<br>Connector-PCB - | 1 | |
| | CN8 | 2244101P0060 | 06FE-ST-VK-N<br>Connector-PCB - | 1 | |
| | CN2 | 224A3357P0020 | 00-8263-0212-00-000<br>Connector-PCB - | 1 | |
| | CN1, CN13 | 224A3357P0040 | 00-8263-0412-00-000<br>Connector-PCB - | 2 | |
| | CN5 | 224A3531P0101 | S10B-PH-K-S<br>Connector-PCB - | 1 | |
| | CN3 | 224A3531P0060 | S6B-PH-K-S<br>Connector-PCB - | 1 | |
| | CN4 | 224A3531P0160 | S16B-PH-K-S<br>Connector-PCB - | 1 | |
| | CN9 | 224A3535P0020 | B2B-EH<br>Connector-PCB - | 1 | |
| | CN12 | 224A3590P0140 | ZC-014<br>Connector-PCB - | 1 | |
| | CN6 | 224A4134P0230 | 23FE-BT-VK-N<br>Connector-PCB - | 1 | |
| | CN10 | 224A4325P0300 | 5-176135-4<br>Connector-PCB - | 1 | |
| | | | | | |
| | X3 | 3805001B0001 | MA-306-29.4912MHz<br>OSC-Crystal -C | 1 | |
| | X2 | 380A1201A0001 | P-3-32.768KHz<br>OSC-Crystal - | 1 | |
| | X1 | 380A1308B1005 | HC-49/U-S-20.000MHz<br>OSC-Crystal - | 1 | |
| | | | | | |
| | BF501 | 105A5010C1002 | BLM21A121S<br>Core -C | 1 | |
| | BAT1 | 455A3027P0001 | CR2430-FT6<br>BATT-Primary - | 1 | |
| | | | | | |
| | F1, F2 | 540A2208S1102 | 251-001<br>FUSE- | 2 | 4KH-31051 |
| | F503 | 5402200S0102 | 431001<br>FUSE -C | 1 | |
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|---|---|
| issued: June 1998<br>DCO No. SR7-0120 | PCB Assy- R51 |
| | 40590801BT - 6/7 |
| Oki Data Corporation | JAPAN |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 2 | LP-7134 | | 1 | L=20mm |
| | 3 | 40771901 | Plate-Earth (CTR) | 1 | |
| | 4 | PSW3-4C | Screw | 2 | |
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| issued: June 1998<br>DCO No. SR7-0120 | PCB Assy- R51 |
| | 40590801BT - 7/7 |
| Oki Data Corporation | JAPAN |


OKI CONFIDENTIAL
Oki Data Corporation
TITLE:
o41w
Drawing Number:
40071401SS
Designed:
Checked:
Approved:
Issue
Rev.
Date
Change Number
Remarks
Channel
Approved
IC1
OSC
IC503
IC504
IC505
IC506
CN1
JP1
JP2
L1
L2
L3
L4
L5
L6
L7
L8
L9
ALM
INT
START
+5V#2
0V

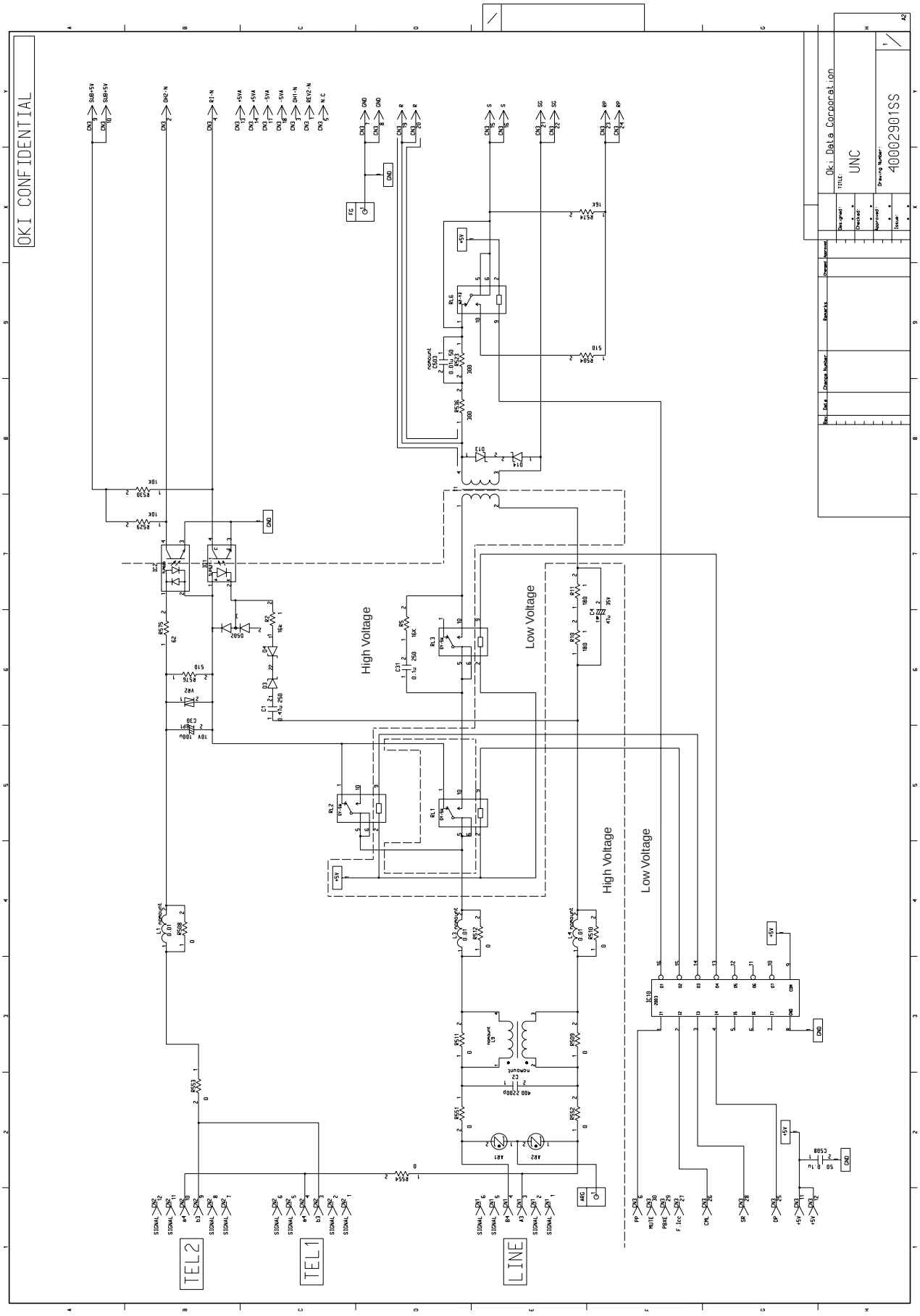

OKI CONFIDENTIAL
Oki Data Corporation
o4w
4007140ISS

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40071499 | PCB-04W | 0.5 | |
| | | | | | |
| | D1 - D8 | 611A0003L0001 | 1S953/1S2075K/1S2473<br>D-Signal | 8 | 4KH-31051-102 |
| | | | | | |
| | L1 | 650A0128M0030 | GL3HD8<br>PHOTO-LED | 1 | |
| | L2 - L7, L9 | 650A0228M0010 | GL3HY8<br>PHOTO-LED | 7 | |
| | | | | | |
| | R15 | 321A1421J0100 | RD1/4Y10‰J<br>RES-Carbon fim - | 1 | 4KH-31051-127 |
| | R22 - R25 | 321A1421J0101 | RD1/4Y100‰J<br>RES-Carbon fim - | 4 | 4KH-31051-127 |
| | R1 | 321A1421J0151 | RD1/4Y150‰J<br>RES-Carbon fim - | 1 | 4KH-31051-127 |
| | R4 - R9, R11 | 321A1412J0221 | RD1/4Y220‰J<br>RES-Carbon fim - | 7 | 4KH-31051-127 |
| | R32 | 321A1412J0102 | RD1/4Y1K‰J<br>RES-Carbon fim - | 1 | 4KH-31051-127 |
| | R10 | 321A1421J0472 | RD1/4Y4.7K‰J<br>RES-Carbon fim - | 1 | 4KH-31051-127 |
| | R12, R14,<br>R19, R20, | 321A1421J0103 | RD1/4Y10K‰J<br>RES-Carbon fim - | 6 | 4KH-31051-127 |
| | R21, R26 | | | | |
| | R13, R16,<br>R17, R18, | 321A1421J0473 | RD1/4Y47K‰J<br>RES-Carbon fim - | 5 | 4KH-31051-127 |
| | R27 | | | | |
| | R28 | 321A1421J0474 | RD1/4Y470K‰J<br>RES-Carbon fim - | 1 | 4KH-31051-127 |
| | R31 | 321A1421J0152 | RD 1/4Y1.5K‰J<br>RES-Carbon fim - | 1 | 4KH-31051-127 |
| | R2 | 321A1421J0392 | RD1/4Y3.9K‰J<br>RES-Carbon fim - | 1 | 4KH-31051-127 |
| | | | | | |
| | RM1 | 334A3268J0103 | MRM-8-103JA<br>Block Resistor | 1 | 1/8 |
| | | | | | |
| | C37, C39 | 302A4011K3101 | DD104B101K50V 50V<br>CAP-Ceramic - | 2 | |
| | C5, C38 | 302A4011K3221 | DD104B221K50V 50V<br>CAP-Ceramic - | 2 | |
| | C22, C23 | 303A4115M3471 | CK92C1H471MS 50V<br>CAP-Ceramic - | 2 | |
| | C33 - C35 | 303A4003M3102 | RD16XR/CK92C1H102<br>CAP-Ceramic -P | 3 | |
| | C36 | 303A4115M3472 | CK92C1H472MS 50V<br>CAP-Ceramic - | 1 | |

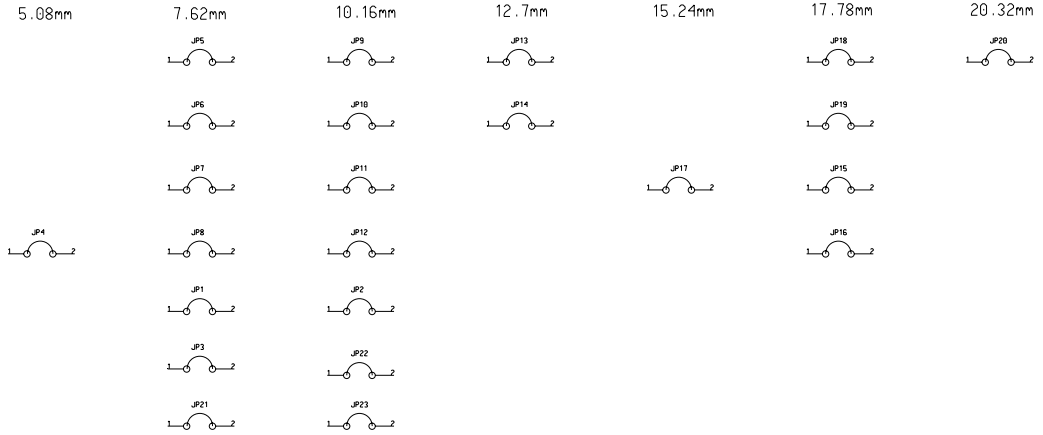
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|---|---|
| issued: June 1998<br>DCO No. SUI-4051 | PCB Assy- 04W |
| | 40071401BT - 1/2 |
| Oki Data Corporation | JAPAN |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | C40 | 304A1046H1688 | 50MS5-0.68M 50V<br>CAP-Alum (CE) | 1 | |
| | C1 | 304A1115E1470 | KME25VB-47 25V<br>CAP-Alum (CE) | 1 | |
| | | | | | |
| | IC1 | 8530183M0005 | M38002M2-289SP<br>CPU-MOS | 1 | |
| | IC502 | 7200022N0001 | M51957AFP<br>Analog-BIPLIN-S | 1 | |
| | IC503 | 702A1703N0008 | 74HC08FP<br>Digital IC-MOS-S | 1 | |
| | IC504 | 702A1703N0126 | 74HC126FP<br>Digital IC-MOS-S | 1 | |
| | IC505 | 702A1703N0032 | 74HC32FP<br>Digital IC-MOS-S | 1 | |
| | | | | | |
| | CN1 | 224A3531P0160 | S16B-PH-K-S<br>Connector-PCB | 1 | |
| | | | | | |
| | SW1 - SW23,<br>SW34 - SW35, | 2051422P1001 | KSM611B<br>Switch-Push - | 34 | |
| | SW56 - SW64 | | | | |
| | OSC | 381A1048B0003 | CST6.00MGW121<br>OSC-Ceramic | 1 | |
| | | | | | |
| | 3 | 238A1079P0001 | SMRJ-B-7/0.16-7X115<br>CONN PAR - | 2 | |
| | | | | | |
| | 2 | YB4134-1026P001 | LCD Driver Module<br>Specification | 1 | |
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| issued: June 1998<br>DOC No. SUI-4051 | PCB Assy- 04W |
| | 40071401BT - 2/2 |
| Oki Data Corporation | JAPAN |


OKI CONFIDENTIAL
Oki Data Corporation
UNC
4000290ISS
High Voltage
Low Voltage
High Voltage
Low Voltage
TEL2
TEL1
LINE

OKI CONFIDENTIAL




| Rev | Date | Change Number | Remarks | Changed | Approved |
|---|---|---|---|---|---|

Oki Data Corporation

Designed:
Checked:
Approved:
Issue:

TITLE: UNC

Drawing Number: 40002901SS

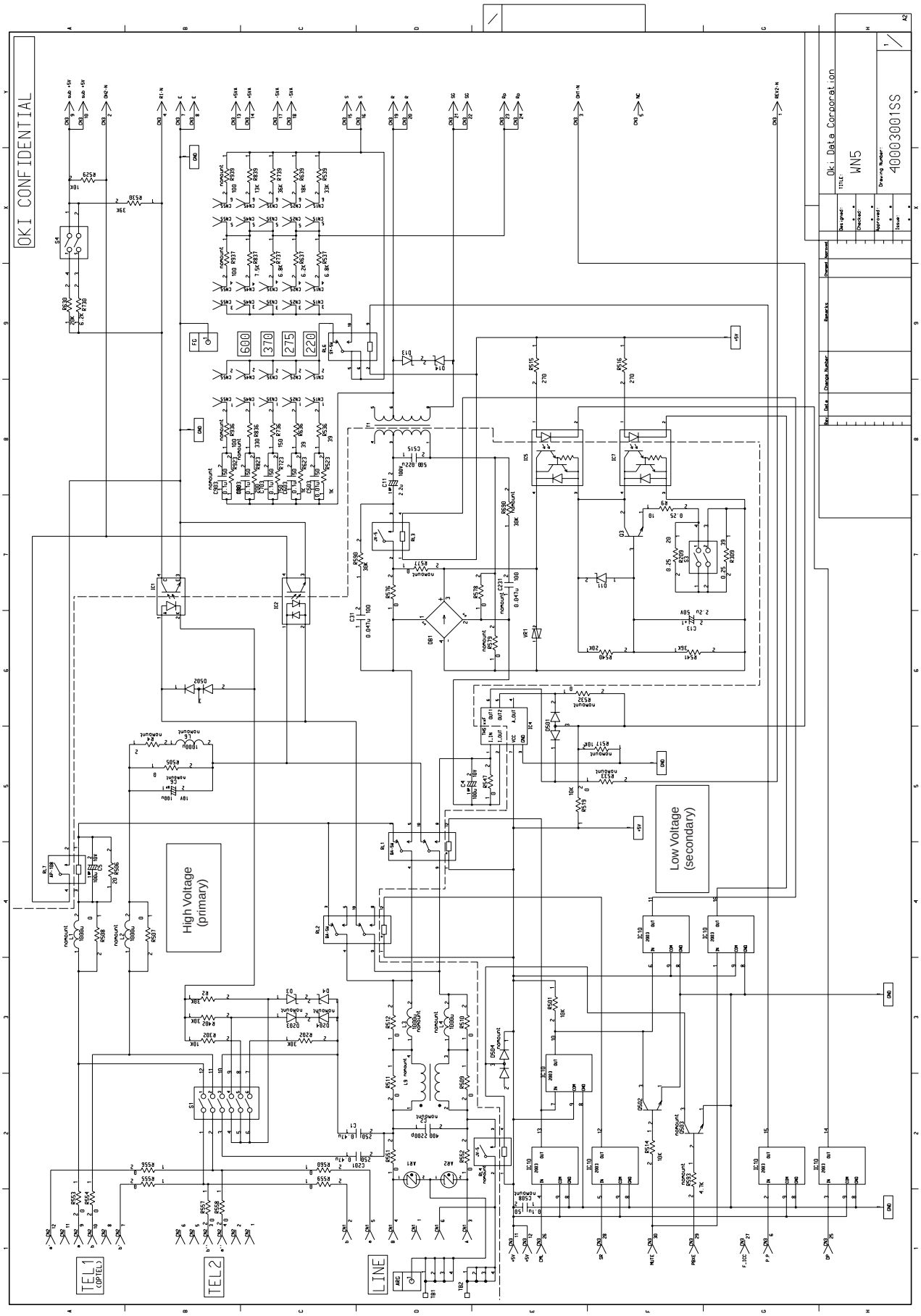
2

A2

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40002999 | PCB-UNC | 0.5 | |
| | | | | | |
| | AR1, 2 | 543A1102G0351 | RH412-351MFT 2<br>SRH412-351MFT | 2 | |
| | | | | | |
| | C1 | 306A2221K5474 | ECQ-E2474KF 250V<br>CAP-Plast fim - | 1 | |
| | C4 | 304A1203V1470 | SME35VB47BP 35V<br>CAP-Alum (CE) -P | 1 | |
| | C30 | 304A1122A1101 | SME10VB-100BP-0A 10V<br>CAP-Alum (CE) - | 1 | |
| | C31 | 306A2221K5104 | ECQ-E2104KF 250V<br>CAP-Plast fim - | 1 | |
| | C508 | 303A6008Z3104 | CK2012F1H104Z 50V<br>CAP-Ceramic -C | 1 | |
| | | | | | |
| | CN1 | 2233001P0001 | TM5RE2V-66<br>Connector-Plug - | 1 | |
| | CN2 | 2233002P0001 | TM5RE3V-1212<br>Connector-Plug - | 1 | |
| | CN3 | 224A4335P0300 | 1-176837-4<br>Connector-PCB - | 1 | |
| | | | | | |
| | IC1 | 652A0125M0008 | TLP521-1-GR<br>Photo-Coupler - | 1 | |
| | IC2 | 6520125M0001 | TLP620<br>Photo-Coupler - | 1 | |
| | IC10 | 760A0403M0701 | 2003P<br>ARRAY-TR | 1 | |
| | | | | | |
| | D3, 4 | 613A1231L0252 | RD20E-B<br>D-Zener | 2 | 4KH-31051-102 |
| | D13, 14 | 613A1231L0162 | RD8.2E-B<br>D-Zener | 2 | 4KH-31051-102 |
| | D502 | 611A0000N0003 | SS100MA80VSCP<br>D-Signal -C | 1 | |
| | | | | | |
| | R2, 5 | 324A1111J0163 | MOR1B16K‰J<br>RES-MET OX - | 2 | 4KH-31050-152 |
| | R10, 11 | 324A1111J0181 | MOR1B180‰J<br>RES-MET OX - | 2 | 4KH-31050-152 |
| | R504, 576 | 323A5003J0511 | RM73B2A511J<br>RES-MET RN -C | 2 | |
| | R529, 530 | 323A5003J0103 | RM73B2A103J<br>RES-MET RN -C | 2 | |
| | R508 - 512<br>R551 - 554 | 323A5003P0001 | 2125JPW<br>RES-MET RN -C | 9 | |
| | R523, 536 | 323A5003J0301 | RM73B2A301J<br>RES-MET RN -C | 2 | |

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|---|---|
| issued: June 1998<br>DCO No. SR3-0082 | PCB Assy- UNC<br>40002901BT - 1/2 |
| Oki Data Corporation | JAPAN |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | R574 | 323A5003J0163 | RM73B2A163J<br>RES-MET RN -C | 1 | |
| | R575 | 323A5003J0620 | RM73B2A620J<br>RES-MET RN -C | 1 | |
| | | | | | |
| | RL1, 2, 3,<br>RL6 | 2601006P1000 | SY-5W-K<br>Relay-General | 4 | |
| | | | | | |
| | T1 | 3613100P0001 | 95U<br>TFORMER-LF | 1 | |
| | | | | | |
| | | | | | |
| | VR2 | 632A0030M0011 | VR-61SS<br>SEMICO-Vari | 1 | 4KH-31051-127 |
| | | | | | |
| | JP1, 3, 5-8,<br>JP21 | TA-0.6 | SHORT WIRE | 7 | L=32MM<br>P=7.5 |
| | JP2, 9- 12,<br>JP22, 23 | TA-0.6 | SHORT WIRE | 7 | L=32MM<br>P=10 |
| | JP4 | TA-0.6 | SHORT WIRE | 1 | L=32MM<br>P=5.0 |
| | JP13, 14 | TA-0.6 | SHORT WIRE | 2 | L=32MM<br>P=12.5 |
| | JP15, 16,<br>JP18, 19 | TA-0.6 | SHORT WIRE | 4 | L=32MM<br>P=17.5 |
| | JP17 | TA-0.6 | SHORT WIRE | 1 | L=32MM<br>P=15 |
| | JP20 | TA-0.6 | SHORT WIRE | 1 | L=32MM<br>P=20 |
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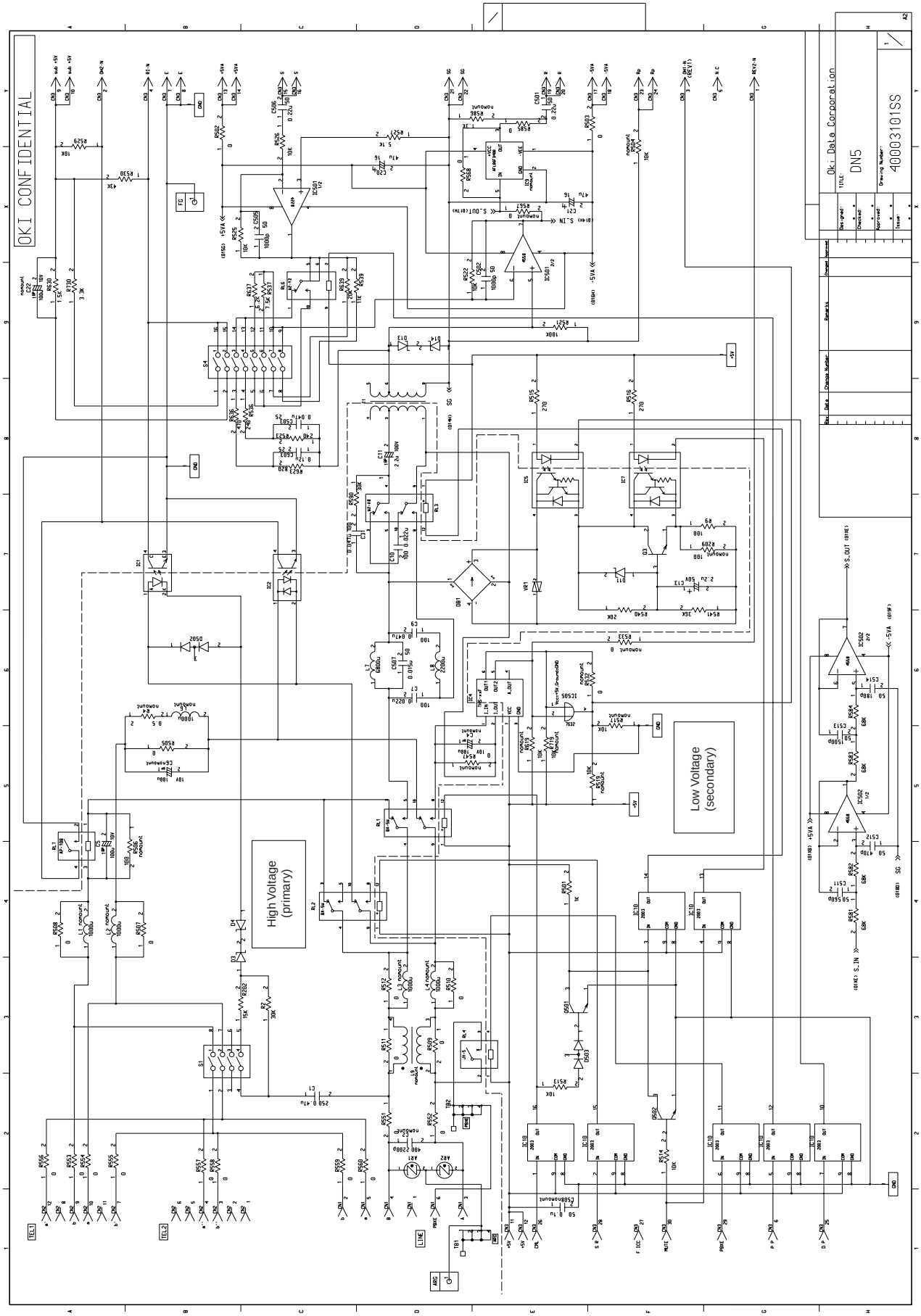

OKI CONFIDENTIAL
Oki Data Corporation
TITLE:
WN5
Drawing Number:
40003001SS
High Voltage (primary)
Low Voltage (secondary)
TEL1 (OPTIEL)
TEL2
LINE

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40003099 | PCB-WN5 | 0.5 | |
| | | | | | |
| | AR1, 2 | 5431001G501 | RA-501P-V6-Y-2<br>ARRESTER-P | 2 | |
| | | | | | |
| | C1, 201 | 306A2221K5474 | ECQ-E2474KF 250V<br>CAP-Plast fim - | 2 | |
| | C5 | 304A1122A1101 | SME10VB-100BP-0A 10V<br>CAP-Alum (CE) - | 1 | |
| | C11 | 304A1203A2229 | UVP2A2R2 100V<br>CAP-Alum (CE) -P | 1 | |
| | C13 | 304A1003H1229 | UVR1H2R2 50V<br>CAP-Alum (CE) -P | 1 | |
| | C31 | 3062002J2473 | ECQB1473JF3 100V<br>CAP-Plate fim -P | 1 | |
| | C515 | 303A6008K3223 | CK2012R1H223K 50V<br>CAP-Ceramic -C | 1 | |
| | C503 | 3036001K3563 | GRM40B563K50 50V<br>CAP-Ceramic -C | 1 | |
| | C603 | 3036001K3683 | GRM40B683K50 50V<br>CAP-Ceramic -C | 1 | |
| | C703 | 3036001K2124 | GRM40B124K25 25V<br>CAP-Ceramic -C | 1 | |
| | C803 | 3036001K3333 | GRM40B333K50 50V<br>CAP-Ceramic -C | 1 | |
| | | | | | |
| | CN1 | 2233001P0001 | TM5RE2V-66<br>Connector-Plug - | 1 | |
| | CN2 | 2233002P0001 | TM5RE3V-1212<br>Connector-Plug - | 1 | |
| | CN3 | 224A4335P0300 | 1-176837-4<br>Connector-PCB - | 1 | |
| | | | | | |
| | D3, 4 | 613A1231L0252 | RD20E-B<br>D-Zener | 2 | 4KH-31051-102 |
| | D11, 13, 14 | 613A1231L0202B | RD12E-B2<br>D-Zener | 3 | 4KH-31051-102 |
| | D501 | 611A0000N0001 | SS100MA80VACP<br>D-Signal -C | 1 | |
| | D502 | 611A0000N0003 | SS100MA80VSCP<br>D-Signal -C | 1 | |
| | | | | | |
| | DB1 | 610A1027M0002D | S1WBA60<br>D-Rectifying - | 1 | |
| | | | | | |
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| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | IC1 | 6520128M0001 | PS123YS<br>PHOTO Coupler - | 1 | |
| | IC2 | 6520123M0001 | PS2525-1<br>PHOTO Coupler - | 1 | |
| | IC5, 7 | 6523123M0002 | PS2532-1<br>PHOTO Coupler - | 2 | |
| | IC10 | 760A0403M0701 | 2003P<br>ARRAY-TR - | 1 | |
| | | | | | |
| | Q3 | 603A1121M0010 | 2SD1209K<br>TR-NPN/L-FREQ - | 1 | 4LH-31420 |
| | Q502 | 602A1025M0033 | 2SC2712-Y/G<br>TR-NPN/H-FREQ -C | 1 | |
| | | | | | |
| | R2, 202, 402 | 324A3011J0303 | MOS1-30KohmJU<br>RES-MET OX - | 3 | |
| | R302 | 3243010J0103 | MOS1-10KohmJU<br>RES-MET OX - | 1 | |
| | R9 | 323A4024F0100 | RNM1/4C2-10ohmF<br>RES-MET RN - | 1 | |
| | R209 | 323A4024F0200 | RNM1/4C2-20ohmF<br>RES-MET RN - | 1 | |
| | R309 | 324A3011J0390 | MOS1-39ohmJU<br>RES-MET OX - | 1 | |
| | R505,<br>R507 - 512 | 323A5003P0001 | 2125JPW<br>RES-MET RN -C | 20 | |
| | R547,<br>R551 - 560 | | | | |
| | R576, 578 | | | | |
| | R501 | 323A5003J0472 | RM73B2A472F<br>RES-MET RN -C | 1 | |
| | R540, 630 | 323A5003J0203 | RM73B2A203J<br>RES-MET RN -C | 2 | |
| | R541 | 323A5003J0363 | RM73B2A363J<br>RES-MET RN -C | 1 | |
| | R515, 516 | 323A5003J0271 | RM73B2A271J<br>RES-MET RN -C | 2 | |
| | R514, 519,<br>R529 | 323A5003J0103 | RM73B2A103J<br>RES-MET RN -C | 3 | |
| | R530 | 323A5003J0393 | RM73B2A393J<br>RES-MET RN -C | 1 | |
| | R730 | 323A5003J0622 | RM73B2A622J<br>RES-MET RN -C | 1 | |
| | R523, 623 | 323A5003F0102 | RM73B2A102F<br>RES-MET RN -C | 2 | |
| | R590 | 323A5003J0303 | RM73B2A303J<br>RES-MET RN -C | 1 | |
| | R536, 636 | 323A5003J0390 | RM73B2A390J<br>RES-MET RN -C | 2 | |
| | R537, 737 | 323A5003F0682 | RM73B2A682F<br>RES-MET RN -C | 2 | |
| | R637 | 323A5003F0622 | RM73B2A622F<br>RES-MET RN -C | 1 | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | R539, 639, R739 | 323A5003F0183 | RM73B2A183F RES-MET RN -C | 3 | |
| | R723 | 323A5003F0751 | RM73B2A751F RES-MET RN -C | 1 | |
| | R736 | 323A5003F0151 | RM73B2A151F RES-MET RN -C | 1 | |
| | R823 | 323A5003F0201 | RM73B2A201F RES-MET RN -C | 1 | |
| | R836 | 323A5003F0331 | RM73B2A331F RES-MET RN -C | 1 | |
| | R837 | 323A5003F0752 | RM73B2A752F RES-MET RN -C | 1 | |
| | R839 | 323A5003F0133 | RM73B2A133F RES-MET RN -C | 1 | |
| | | | | | |
| | RL1, 2 | 2601004P1000 | BA-5W-K Relay-General - | 2 | |
| | RL3 | 2601005P1000 | JV-5-K Relay-General - | 1 | |
| | RL6 | 2601006P1000 | SY-5W-K Relay-General - | 1 | |
| | RL7 | 2611000P1000 | ULR-T10910H Relay-Lead - | 1 | |
| | | | | | |
| | T1 | 3613000P0001 | SR-422 TFORMER-LF - | 1 | |
| | | | | | |
| | TB1 | 230A6021P0002 | P-97 CONN PAR - | 1 | |
| | | | | | |
| | S1 | 206A1100P0600 | BS6-01 Switch-DIP - | 1 | |
| | S3, 4 | 206A1100P0200 | BS2-01 Switch-DIP - | 1 | |
| | | | | | |
| | CN15, 25, 35, CN45 | 224A4082P0060 | IMSA9202B-1-06Z013GF Connector-PCB - | 4 | |
| | | | | | |
| | VR1 | 6320003M0002 | ERZV/ENC-10A-D151 SEMICO-Vari - | 1 | |
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|---|---|
| issued: June 1998<br>DCO No. SR3-0081 | PCB Assy- WN5 |
| | 40003001BT - 3/3 |
| Oki Data Corporation | JAPAN |


OKI CONFIDENTIAL
Oki Data Corporation
DN5
40003101SS
High Voltage (primary)
Low Voltage (secondary)

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40003199 | PCB-DN5 | 0.5 | |
| | | | | | |
| | AR1, 2 | 5341001G0501 | RA-501P-V6-Y-2<br>ARRESTER -P | 2 | |
| | | | | | |
| | C1 | 306A2221K5474 | ECQ-E2474KF 250V<br>CAP-Plast fim - | 1 | |
| | C5 | 304A1122A1101 | SME10VB-100BP-0A 10V<br>CAP-Alum (CE) - | 1 | |
| | C7, 10 | 3062002J2223 | ECQB1223JF3 100V<br>CAP-Plast fim -P | 2 | |
| | C9, 31 | 3062002J2473 | ECQB1473JF3 100V<br>CAP-Plast fim -P | 2 | |
| | C11 | 3041203A2229 | UVP2A2R2 100V<br>CAP-Alum (CE) -P | 1 | |
| | C13 | 3041003H1229 | UVP1H2R2 50V<br>CAP-Alum (CE) -P | 1 | |
| | C503 | 303A6008K2473 | CK2012B1E473K 25V<br>CAP-Ceramic -C | 1 | |
| | C20, 21 | 304A1123C1470 | SME16VB-47-0A 16V<br>CAP-Alum (CE) -47 F | 2 | |
| | C501, 506 | 303A6008Z2224 | CK2012F1E224Z 25V<br>CAP-Ceramic -C | 2 | |
| | C502, 505 | 303A6008K3102 | CK2012B1H102K 50V<br>CAP-Ceramic -C | 2 | |
| | C507 | 303A6008K3153 | CK2012B1H153K 50V<br>CAP-Ceramic -C | 1 | |
| | C603 | 3036008K2124 | GRM40B124K25 25V<br>CAP-Ceramic -C | 1 | |
| | C511 | 303A3007K051 | CC2012SL1H561J 50V<br>CAP-Ceramic -C | 1 | |
| | C512 | 303A3007C0471 | CC2012CH1H471J 50V<br>CAP-Ceramic -C | 1 | |
| | C513 | 303A6008K3152 | CK2012B1H152K 50V<br>CAP-Ceramic -C | 1 | |
| | C514 | 303A3007K0181 | CC2012SL1H181J 50V<br>CAP-Ceramic -C | 1 | |
| | | | | | |
| | CN1 | 2233001P0001 | TM5RE2V-66<br>Connector-Plug - | 1 | |
| | CN2 | 2233002P0001 | TM5RE3V-1212<br>Connector-Plug - | 1 | |
| | CN3 | 224A4335P0300 | 1-176837-4<br>Connector-PCB - | 1 | |
| | | | | | |
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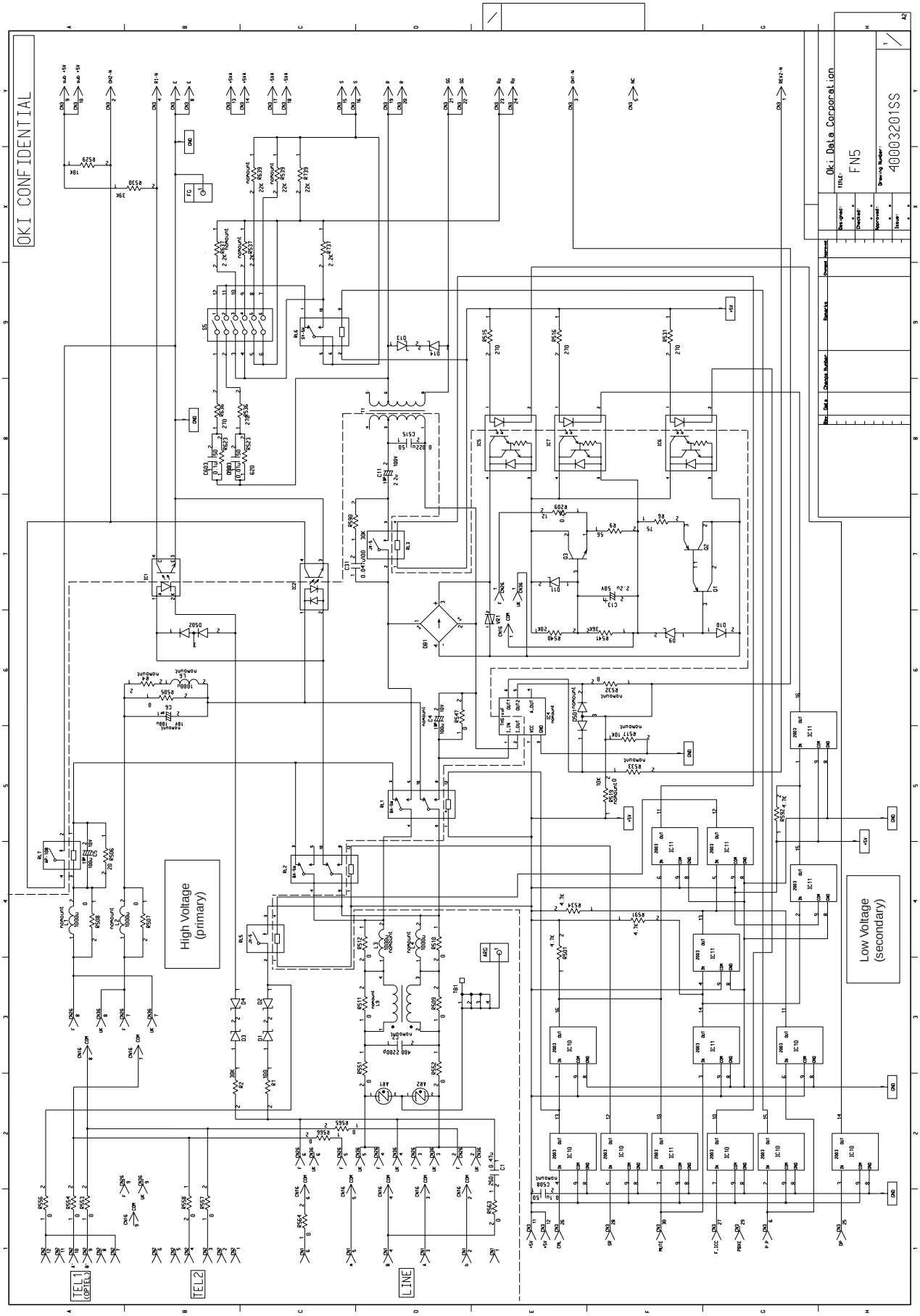
| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | D3, 4 | 613A1231L0162 | RD8.2E-B<br>D-Zener - | 2 | 4KH-31051-102 |
| | D11 | 613A2232L0132 | RD6.2F-B<br>D-Zener - | 1 | 4KH-31051-152 |
| | D13, 14 | 613A1231L0202A | RD12E-B1<br>D-Zener - | 2 | 4KH-31051-102 |
| | D502, 503 | 611A0000N0003 | SS100MA80VSCP<br>D-Signal -C | 2 | |
| | | | | | |
| | DB1 | 610A1027M0002D | S1WBA60<br>D-Rectifying - | 1 | |
| | | | | | |
| | IC1 | 6520128M0001 | PC123YS<br>PHOTO Coupler- | 1 | |
| | IC2 | 6520123M0001 | PS2525-1<br>PHOTO Coupler- | 1 | |
| | IC5, 7 | 6523123M0002 | PS2532-1<br>PHOTO Coupler- | 2 | |
| | IC10 | 760A0403M0701 | 2003P<br>ARRAY-TR - | 1 | |
| | IC501, 502 | 720A0028N0039 | NJM4558M<br>Analog-BIPLIN -S | 2 | |
| | | | | | |
| | L7 | 3531001J0682 | LHL08TB-682J<br>Coil-HF -P | 1 | |
| | L8 | 3531001J0222 | LHL08TB-222J<br>Coil-HF -P | 1 | |
| | | | | | |
| | Q3 | 603A1121M0010 | 2SD1209K<br>TR-NPN/L-FREQ - | 1 | 4LH-31420 |
| | Q501, 502 | 602A1025M0033 | 2SC2712-Y/G<br>TR-NPN/H-FREQ -C | 2 | |
| | | | | | |
| | R2 | 324A3011J0303 | MOS1-30KohmJU<br>RES-MET OX - | 1 | |
| | R202 | 324A3011J0153 | MOS1-15KohmJU<br>RES-MET OX - | 1 | |
| | R502, 503,<br>R505, | 323A5003P0001 | 2125JPW<br>RES-MET RN -C | 22 | |
| | R507 - 512,<br>R547, | | | | |
| | R551 - 560<br>R568 - 585 | | | | |
| | | | | | |
| | | | | | |
| | R540 | 323A5003J0203 | RM73B2A203J<br>RES-MET RN -C | 1 | |
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|---|---|
| issued: June 1998<br>DCO No. SR3-0092 | PCB Assy- DN5 |
| | 40003101BT - 2/4 |
| Oki Data Corporation | JAPAN |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | R541 | 323A5003J0363 | RM73B2A363J<br>RES-MET RN -C | 1 | |
| | R515, 516 | 323A5003J0271 | RM73B2A271J<br>RES-MET RN -C | 2 | |
| | R513, 514,<br>R529 | 323A5003J0103 | RM73B2A103J<br>RES-MET RN -C | 3 | |
| | | | | | |
| | R522, 525,<br>R526 | 323A5003F0103 | RM73B2A103F<br>RES-MET RN -C | 3 | |
| | R530 | 323A5003J0433 | RM73B2A433J<br>RES-MET RN -C | 1 | |
| | R630 | 323A5003J0152 | RM73B2A152J<br>RES-MET RN -C | 1 | |
| | R730 | 323A5003J0332 | RM73B2A332J<br>RES-MET RN -C | 1 | |
| | R501 | 323A5003F0102 | RM73B2A102F<br>RES-MET RN -C | 1 | |
| | R521 | 323A5003F0104 | RM73B2A104F<br>RES-MET RN -C | 1 | |
| | R527 | 323A5003F0512 | RM73B2A512F<br>RES-MET RN -C | 1 | |
| | R523, 536 | 323A5003F0241 | RM73B2A241F<br>RES-MET RN -C | 2 | |
| | R539 | 323A5003F0113 | RM73B2A113F<br>RES-MET RN -C | 1 | |
| | R537 | 323A5003F0752 | RM73B2A752F<br>RES-MET RN -C | 1 | |
| | R637 | 323A5003F0622 | RM73B2A622F<br>RES-MET RN -C | 1 | |
| | R623 | 323A5003F0821 | RM73B2A821F<br>RES-MET RN -C | 1 | |
| | R636 | 323A5003F0471 | RM73B2A471F<br>RES-MET RN -C | 1 | |
| | R639 | 323A5003F0203 | RM73B2A203F<br>RES-MET RN -C | 1 | |
| | R9 | 324A3011J0101 | MOS1-100ohmJU<br>RES-MET OX - | 1 | |
| | R581 - 584 | 323A5003F0683 | RM73B2A683F<br>RES-MET RN -C | 4 | |
| | R590 | 323A5003J0303 | RM73B2A303J<br>RES-MET RN -C | 1 | |
| | | | | | |
| | RL1, 2, 3 | 2601004P1000 | BA-5W-K<br>Relay-General - | 3 | |
| | RL4 | 2601005P1000 | JV-5-K<br>Relay-General - | 1 | |
| | RL6 | 2601006P1000 | SY-5W-K<br>Relay-General - | 1 | |
| | RL7 | 2611000P1000 | ULR-T10910H<br>Relay-Lead | 1 | |
| | | | | | |
| | | | | | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | T1 | 3613000P0001 | SR422<br>TFORMER-LF - | 1 | |
| | | | | | |
| | TB1, 2 | 230A6021P0002 | P-97<br>CONN PAR- - | 2 | |
| | | | | | |
| | S1 | 206A1100P0400 | BS4-01<br>Switch-DIP - | 1 | |
| | S4 | 206A1100P0800 | BS8-01<br>Switch-DIP - | 1 | |
| | | | | | |
| | VR1 | 6320003M0002 | ERZV/ENC-10A-D151<br>SEMICO-Vari - | 1 | |
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| issued: June 1998<br>DCO No. SR3-0092 | PCB Assy- DN5 |
| | 40003101BT - 4/4 |
| Oki Data Corporation | JAPAN |

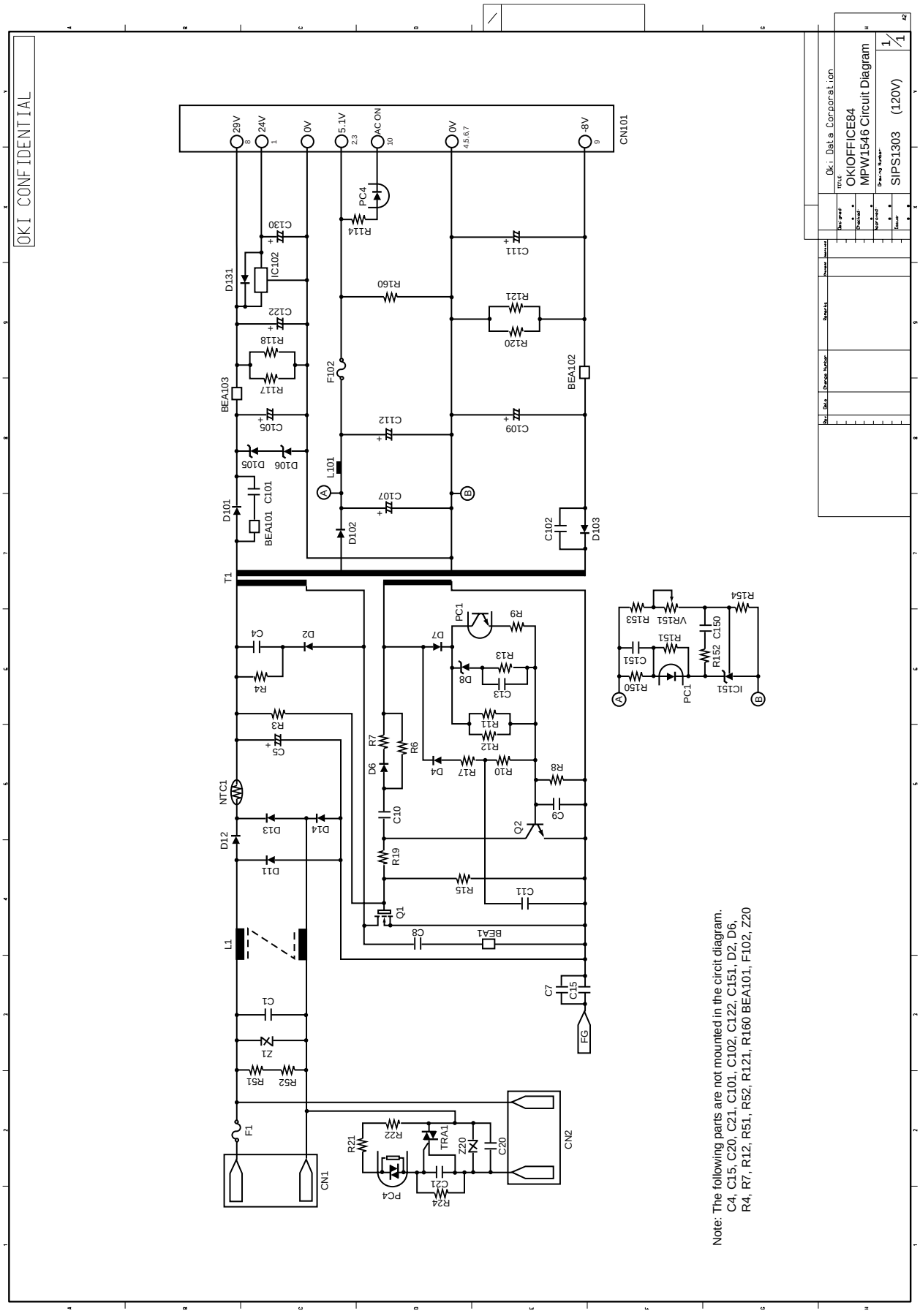

OKI CONFIDENTIAL
Oki Data Corporation
TITLE: FN5
Drawing Number: 40003201SS
Issue: 1
High Voltage (primary)
Low Voltage (secondary)
TEL1 (OPTIEL)
TEL2
LINE

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40003299 | PCB-FN5 | 0.5 | |
| | | | | | |
| | AR1, 2 | 5431001G0501 | RA-501P-V6-Y-2<br>ARRESTER -P | 2 | |
| | | | | | |
| | C1 | 306A2221K5474 | ECQ-E2474KF 250V<br>CAP-Plast flm - | 1 | |
| | C5 | 304A1122A1101 | SME10VB-100BP-0A 10V<br>CAP-Alum (CE) - | 1 | |
| | C11 | 3041203A2229 | UVP2A2R2 100V<br>CAP-Alum (CE) -P | 1 | |
| | C13 | 3041003H1229 | UVR1H2R2 50V<br>CAP-Alum (CE) -P | 1 | |
| | C31 | 306002J2473 | ECQB1473JF3 100V<br>CAP-Plast flm -P | 1 | |
| | C503 | 3036001K2154 | GRM40B154K25 25V<br>CAP-Ceramic -C | 1 | |
| | C603 | 3006001K3333 | GRM40B333K50 50V<br>CAP-Ceramic -C | 1 | |
| | C515 | 303A6008K3223 | CK2012R1H223K 50V<br>CAP-Ceramic -C | 1 | |
| | | | | | |
| | CN1 | 2233001P0001 | TM5RE2V-66<br>Connector-Plug - | 1 | |
| | CN2 | 2233002P0001 | TM5RE3V-1212<br>Connector-Plug - | 1 | |
| | CN3 | 224A4335P0300 | 1-176837-4<br>Connector-PCB - | 1 | |
| | CN16 | 40095601 | CONN Cord-FN5<br>Short Cable | 1 | |
| | CN26, 36 | 224A3529P0090 | B9B-PH-K-S<br>Connector-PCB - | 2 | |
| | | | | | |
| | D1, 2 | 613A1231L0082B | RD3.9E-B2<br>D-Zener | 2 | 4KH-31051-102 |
| | D3, 4 | 613A1231L0252 | RD20E-B<br>D-Zener | 2 | 4KH-31051-102 |
| | D9 | 613A1231L0112B | RD5.1E-B2<br>D-Zener | 1 | 4KH-31051-102 |
| | D10 | 611A0037L0011 | E-152<br>D-Signal | 1 | 4KH-31051-102 |
| | D11, 13, 14 | 613A1231L0202B | RD12E-B2<br>D-Zener | 3 | 4KH-31051-102 |
| | D502 | 611A0000N0003 | SS100MA80VSCP<br>D-Signal -C | 1 | |
| | | | | | |
| | DB1 | 610A1027M0002D | S1WBA60<br>D-Rectifying - | 1 | |
| | | | | | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | IC1 | 6520128M0001 | PC123YS<br>PHOTO Coupler | 1 | |
| | IC2 | 6520123M0001 | PS2525-1<br>PHOTO Coupler | 1 | |
| | IC5, 6, 7 | 652A0123M0019 | PS2532-1<br>PHOTO OCoupler | 3 | |
| | IC10, 11 | 760A0403M0701 | 2003P<br>ARRAY-TR - | 2 | |
| | | | | | |
| | Q1 | 600A1132M0001 | 2SA1248<br>TR-PNP/H FREQ - | 1 | |
| | Q2 | 600A1226F0018 | 2SA1491<br>TR-PNP/H FREQ - | 1 | |
| | Q3 | 603A1121M0010 | 2SD1209K<br>TR-NPN/L-FREQ - | 1 | 4LH-31420 |
| | | | | | |
| | R1 | 321A1431L0101 | RD1/2Y100‰J<br>RES-Carbon flm - | 1 | 4KH-31051-152 |
| | R2 | 324A3011J0303 | MOS1-30K‰JU<br>RES-MET OX - | | |
| | R6 | 321A1431J0750 | RD1/2Y75‰J<br>RES-Carbon flm - | 1 | 4KH-31051-152 |
| | R9 | 324A3011J0560 | MOS1-56‰JU<br>RES-MET OX -C | 1 | |
| | R209 | 323A4024F0120 | RNM1/4C2-12‰F<br>RES-MET RN - | 1 | |
| | R505,<br>R507 - 512, | 323A5003P0001 | 2125JPW<br>RES-MET RN -C | 19 | |
| | R547,<br>R551 - 554, | | | | |
| | R556 - 558,<br>R563 - 566 | | | | |
| | | | | | |
| | R540 | 323A5003J0203 | RM73B2A203J<br>RES-MET RN -C | 1 | |
| | R541 | 323A5003J0363 | RM73B2A363J<br>RES-MET RN -C | 1 | |
| | R529 | 323A5003J0103 | RM73B2A103J<br>RES-MET RN -C | 1 | |
| | R530 | 323A5003J0393 | RM73B2A393J<br>RES-MET RN -C | 1 | |
| | R523 | 323A5003F0621 | RM73B2A621F<br>RES-MET RN -C | 1 | |
| | R623 | 323A5003F0331 | RM73B2A331F<br>RES-MET RN -C | 1 | |
| | R501, 534,<br>R591, 592 | 323A5003J0472 | RM73B2A472J<br>RES-MET RN -C | 4 | |
| | | | | | |
| | R515, 516,<br>R531, 536 | 323A5003J0271 | RM73B2A271J<br>RES-MET RN -C | 5 | |
| | R636 | | | | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | R590 | 323A5003J0303 | RM73B2A303J<br>RES-MET RN -C | 1 | |
| | R637, 537 | 323A5003F0682 | RM73B2A682J<br>RES-MET RN -C | 2 | |
| | R539 | 323A5003F0223 | RM73B2A223J<br>RES-MET RN -C | 1 | |
| | R639 | 323A5003F0153 | RM73B2A153J<br>RES-MET RN -C | 1 | |
| | | | | | |
| | RL1, 2 | 2601004P1000 | BA-5W-K<br>-General - | 2 | |
| | RL3, 5 | 2601005P1000 | JV-5-K<br>-General - | 2 | |
| | RL6 | 2601006P1000 | SY-5W-K<br>-General - | 1 | |
| | RL7 | 2611000P1000 | ULR-T10910H<br>Relay-Lead | 1 | |
| | | | | | |
| | T1 | 3613000P0001 | SR-422<br>TFORMER-LF - | 1 | |
| | | | | | |
| | TB1 | 230A6021P0002 | P-97<br>CONN PAR- - | 1 | |
| | | | | | |
| | S5 | 206A1100P0600 | BS6-01<br>Switch-DIP - | 1 | |
| | | | | | |
| | VR1 | 6320003M0002 | ERZV/ENC-10A-D151<br>SEMICO-Vari - | 1 | |
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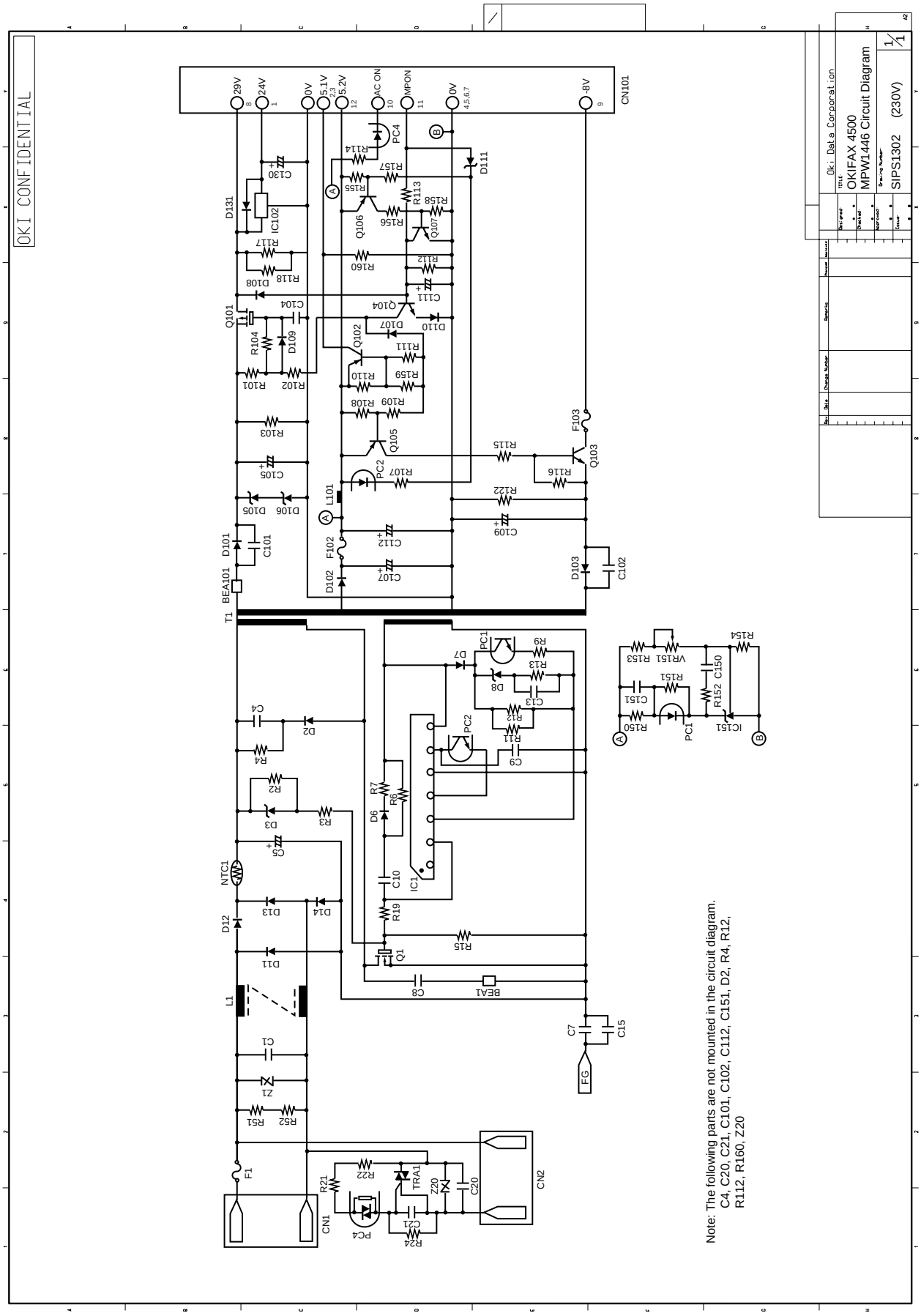
| | |
|---|---|
| issued: June 1998<br>DCO No. SR3-0081 | PCB Assy- FN5 |
| | 40003201BT - 3/3 |
| Oki Data Corporation | JAPAN |


OKI CONFIDENTIAL
CN101
29V
24V
0V
5.1V
AC ON
0V
-8V
Oki Data Corporation
OKIOFFICE84
MPW1546 Circuit Diagram
SIPS1303 (120V)
Note: The following parts are not mounted in the circit diagram.
C4, C15, C20, C21, C101, C102, C122, C151, D2, D6,
R4, R7, R12, R51, R52, R121, R160 BEA101, F102, Z20

| Rev. | Symbol | Description | Q ty | Remarks |
|---|---|---|---|---|
| | D11, 12, 13 14, 131 | DIODE ERA15-06 | 5 | FUJI ELECTRIC CO., LTD. |
| | D101 | DIODE YG911S2 | 1 | FUJI ELECTRIC CO., LTD. |
| | D102 | DIODE YG811S06R | 1 | FUJI ELECTRIC CO., LTD. |
| | D4, 7 | DIODE 1SS133 | 2 | ROHM CO., LTD. |
| | D103 | DIODE ERA22-06 | 1 | FUJI ELECTRIC CO., LTD. |
| | D105, 106 | ZENER DIODE HZ-24 | 2 | HITACHI LTD. |
| | D8 | ZENER DIODE HZS9 | 1 | HITACHI LTD. |
| | D2, 6 | | | NOT MOUNTED |
| | | | | |
| | TRA1 | TRIODE AC SEMICONDUCTOR SWITCH SM12JZ47 | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components |
| | | | | |
| | Q2 | TRANSISTOR 2SC1741AS | 1 | ROHM CO., LTD. OPERATIONS-Electronic Components |
| | Q1 | FET 2SK2972 | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components |
| | | | | |
| | IC102 | INTEGRATED CIRCUIT TA78M24S | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components |
| | IC151 | INTEGRATED CIRCUIT TA76431S | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electronic Components |
| | | | | |
| | PC4 | OPTICAL ISOLATER TLP561G | 1 | TOSHIBA CORP. INTERNATIONAL |
| | PC1 | OPTICAL ISOLATOR PC817 | 1 | SHARP Corp. Electronic Components Group OPERATIONS-Electronic Components |
| | | | | |
| | Z1 | TRANSIENT VOLTAGE SURGE SUPPRESSOR EN241 | 1 | FUJI ELECTRIC CO., LTD. |
| | Z20 | | | NOT MOUNTED |
| | | | | |
| | NTC1 | NTC THERMISTOR NTH7D4R0 | 1 | MURATA MFG CO., LTD. |
| | | | | |
| | R19 | RESISTOR 1/4W 10‰ | 1 | |
| | R21 | RESISTOR 1/4W 22‰ | 1 | |
| | R9 | RESISTOR 1/4W 68‰ | 1 | |

| Rev. | Symbol | Description | Q ty | Remarks |
|---|---|---|---|---|
| | R24 | RESISTOR 1/4W 150‰ | 1 | |
| | R114, 150 | RESISTOR 1/4W 220‰ | 2 | |
| | R6 | RESISTOR 1/4W 330‰ | 1 | |
| | R17 | RESISTOR 1/4W 820‰ | 1 | |
| | R151 | RESISTOR 1/4W 1K‰ | 1 | |
| | R120 | RESISTOR 1/4W 1.8‰ | 1 | |
| | R10 | RESISTOR 1/4W 3.9K‰ | 1 | |
| | R152 | RESISTOR 1/4W 4.7K‰ | 1 | |
| | R11 | RESISTOR 1/4W 5.6K‰ | 1 | |
| | R153 | RESISTOR 1/4W 6.8K‰ | 1 | |
| | R154 | RESISTOR 1/4W 8.2K‰ | 1 | |
| | R117, 118 | RESISTOR 1/4W 15K‰ | 2 | |
| | R13 | RESISTOR 1/4W 18K‰ | 1 | |
| | R15 | RESISTOR 1/4W 22K‰ | 1 | |
| | R8 | RESISTOR 1/4W 33K‰ | 1 | |
| | R3 | RESISTOR 1/4W 390K‰ | 1 | |
| | R22 | RESISTOR 1/6W 10‰ | 1 | |
| | R4, 7, 12, 51<br>R52, 121, 160 | | | NOT MOUNTED |
| | | | | |
| | VR151 | RESISTOR 1/10W 5K‰ | 1 | |
| | | | | |
| | C11, 13 | CERAMIC CAPACITOR<br>50V 100pF | 2 | MURATA MFG. CO., LTD. |
| | C150 | CERAMIC CAPACITOR<br>50V 0.1 F | 1 | MURATA MFG. CO., LTD. |
| | C8 | CERAMIC CAPACITOR<br>1KV 220pF | 1 | MURATA MFG. CO., LTD. |
| | C7 | CERAMIC CAPACITOR<br>VA3 10000pF | 1 | MURATA MFG. CO., LTD. |
| | C1 | FILM CAPACITOR<br>AC250V 0.1 F (RE) | 1 | OKAYA ELECTRIC INDUSTRIES CO., LTD. |
| | C9, 10 | FILM CAPACITOR<br>50V 4700pF | 2 | |
| | C112, 130 | ELECTROLYTIC CAPACITOR<br>35V 82 F | 2 | |

| Rev. | Symbol | Description | Q ty | Remarks |
|---|---|---|---|---|
| | C109 | ELECTROLYTIC CAPACITOR 35V 220 F | 1 | |
| | C107 | ELECTROLYTIC CAPACITOR 35V 560 F | 1 | |
| | C122 | ELECTROLYTIC CAPACITOR 50V 56 F | 1 | |
| | C105 | ELECTROLYTIC CAPACITOR 50V 180 F | 1 | |
| | C5 | ELECTROLYTIC CAPACITOR 200V 220 F | 1 | |
| | C4, 15, 20, C21, 101, 102 | | | NOT MOUNTED |
| | C122, 151 | | | |
| | | | | |
| | L1 | INDUCOTR ELF15N006 | 1 | MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. |
| | L101 | INDUCTOR 150S | 1 | MURATA MFG. CO., LTD. |
| | | | | |
| | T1 | TRANSFORMER 2C45 | 1 | MURATA MFG. CO., LTD. |
| | | | | |
| | BEA1 | FERRITE BEADS | 1 | MURATA MFG. CO., LTD. |
| | BEA102, 103 | FERRITE BEADS | 2 | MURATA MFG. CO., LTD. |
| | BEA 101 | | | NOT MOUNTED |
| | | | | |
| | F1 | FUSE AC125V 8.0A (237) | 1 | LITTELFUSE INC. |
| | F102 | | | NOT MOUNTED |
| | | | | |
| | CN1 | CONNECTOR 5277-02A | 1 | MOLEX INC. |
| | CN101 | CONNECTOR S12B-XH-A-1 | 1 | JAPAN SOLDERLESS TERMINAL MFG. CO., LTD. |
| | CN2 | CONNECTOR B2P3-VH | 1 | JAPAN SOLDERLESS TERMINAL MFG. CO., LTD. |
| | | | | |
| | | PRINTED WIRING BOARD | 1 | |
| | | | | |
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OKI CONFIDENTIAL
CN101
29V
24V
0V
5.1V
5.2V
AC ON
MPON
0V
8V
Oki Data Corporation
OKIFAX 4500
MPW1446 Circuit Diagram
SIPS1302 (230V)
Note: The following parts are not mounted in the circuit diagram.
C4, C20, C21, C101, C102, C112, C151, D2, R4, R12,
R112, R160, Z20

| Rev. | Symbol | Description | Q ty | Remarks |
|---|---|---|---|---|
| | C11, 12, 13 14, 131 | DIODE ERA15-06 | 5 | FUJI ELECTRIC CO., LTD. |
| | D102 | DIODE YG811S06R | 1 | FUJI ELECTRIC CO., LTD. |
| | D101 | DIODE YG911S2R | 1 | FUJI ELECTRIC CO., LTD. |
| | D6, 7, 107 108, 109, 110 | DIODE 1SS133 | 6 | ROHM CO., LTD. |
| | D103 | DIODE ERA22-06 | 1 | FUJI ELECTRIC CO., LTD. |
| | D105, 106 | ZENER DIODE HZ-24 | 2 | HITACHI LTD. |
| | D8 | ZENER DIODE HZS9 | 1 | HITACHI LTD. |
| | D3 | ZENER DIODE RD120 | 1 | HITACHI LTD. |
| | D2 | | | NOT MOUNTED |
| | | | | |
| | TRA1 | TRIODE AC SEMICONDUCTOR SWITCH SM12JZ47 | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electric Compoments |
| | | | | |
| | Q101 | TRANSISTOR 2SJ303 | 1 | ROHM CO., LTD. |
| | Q102 | TRANSISTOR 2SA1757 | 1 | ROHM CO., LTD. |
| | Q105, 106 | TRANSISTOR 2SA933S | 2 | ROHM CO., LTD. |
| | Q104, 107 | TRANSISTOR 2SC1740S | 2 | ROHM CO., LTD. |
| | Q103 | TRANSISTOR 2SD1858 | 1 | ROHM CO., LTD. |
| | Q1 | FET 2SK2717 | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electric Compornents |
| | | | | |
| | IC102 | INTEGRATED CIRCUIT TA78M24S | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electric Compornents |
| | IC151 | INTEGRATED CIRCUIT TA76431 | 1 | TOSHIBA CORP. INTERNATIONAL OPERATIONS-Electric Compornents |
| | IC1 | INTEGRATED CIRCUIT H8D2877 | 1 | MURATA MFG. CO., LTD. |
| | | | | |
| | PC1, 2 | OPTICAL ISOLATER PC123 | 2 | SHARP Corp. Electronic Compornents Group. |
| | PC4 | OPTICAL ISOLATOR S21ME6 | 1 | SHARP Corp. Electronic Compornents Group. |
| | | | | |
| | Z1 | TRANSIENT VOLTAGE SURGE SUPPRESSOR ENC471 | 1 | FUJI ELECTRIC CO., LTD. |
| | | | | |

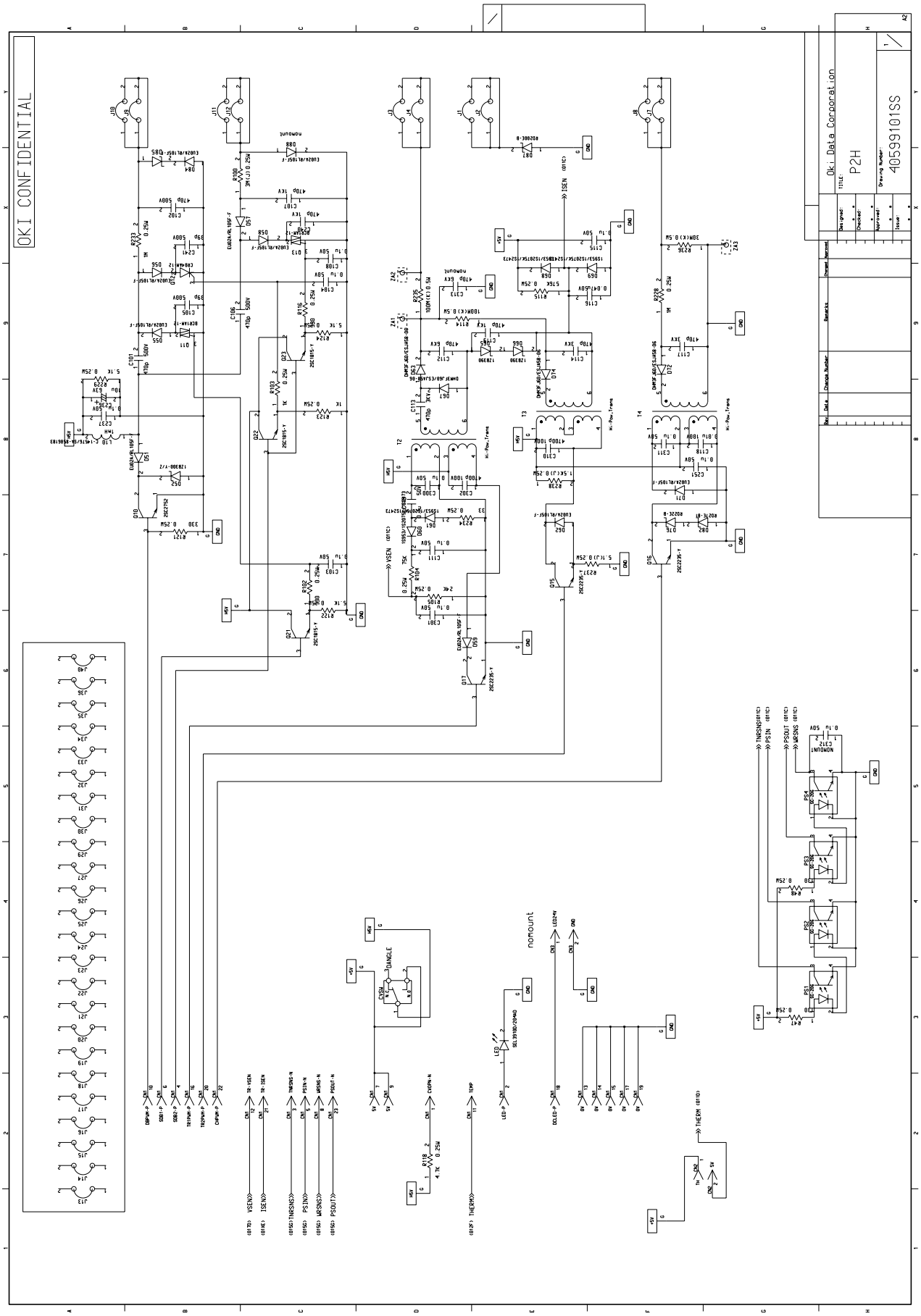
| Rev. | Symbol | Description | Q ty | Remarks |
|---|---|---|---|---|
| | NTC1 | NTC THERMISTOR NTH7D8R0 | 1 | MURATA MFG. CO., LTD. |
| | | | | |
| | R19 | RESISTOR 1/4W 10‰ | 1 | |
| | R21 | RESISTOR 1/4W 22‰ | 1 | |
| | R9 | RESISTOR 1/4W 68‰ | 1 | |
| | R111, 159 | RESISTOR 1/4W 100‰ | 2 | |
| | R24 | RESISTOR 1/4W 150‰ | 1 | |
| | R114, 150 | RESISTOR 1/4W 220‰ | 2 | |
| | R6 | RESISTOR 1/4W 270‰ | 1 | |
| | R7 | RESISTOR 1/4W 330‰ | 1 | |
| | R151 | RESISTOR 1/4W 1K‰ | 1 | |
| | R113, 115 | RESISTOR 1/4W 2.2K‰ | 2 | |
| | R107 | RESISTOR 1/4W 3.3K‰ | 1 | |
| | R101, 109, R156, | RESISTOR 1/4W 4.7K‰ | 7 | |
| | R157, 152 R155, 158 | | | |
| | | | | |
| | R102, R153 | RESISTOR 1/4W 6.8K‰ | 2 | |
| | R154 | RESISTOR 1/4W 8.2K‰ | 1 | |
| | R108, 110 R116 | RESISTOR 1/4W 10K‰ | 3 | |
| | R11, 12 | RESISTOR 1/4W 12K‰ | 2 | |
| | | | | |
| | R117, 118 | RESISTOR 1/4W 15K‰ | 2 | |
| | R13 | RESISTOR 1/4W 47K‰ | 1 | |
| | R15 | RESISTOR 1/4W 22K‰ | 1 | |
| | R122 | RESISTOR 1/4W 100K‰ | 1 | |
| | R103 | RESISTOR 1/4W 220K‰ | 1 | |
| | R3 | RESISTOR 1/4W 750K‰ | 1 | |
| | R104 | RESISTOR 1/4W 1M‰ | 1 | |

| Rev. | Symbol | Description | Q ty | Remarks |
|---|---|---|---|---|
| | R2, 51, 52 | RESISTOR 1/4W 2.2M‰ | 3 | |
| | R22 | RESISTOR 1/6W 10‰ | 1 | |
| | R4, 12, 112<br>R160 | | | NOT MOUNTED |
| | | | | |
| | VR151 | RESISTOR 1/10W 5K‰ | 1 | |
| | | | | |
| | C9, 13 | CERAMIC CAPACITOR<br>50V 100pF | 2 | MURATA MFG. CO., LTD. |
| | C104, 150 | CERAMIC CAPACITOR<br>50V 0.1 F | 2 | MURATA MFG. CO., LTD. |
| | C7, 15 | CERAMIC CAPACITOR<br>VA3 3300pF | 2 | MURATA MFG. CO., LTD. |
| | C8 | CERAMIC CAPACITOR<br>2KV 47pF | 1 | MURATA MFG. CO., LTD. |
| | C1 | FILM CAPACITOR<br>AC275V 0.22 F (RE) | 1 | OKAYA ELECTRIC INDUSTRIES CO., LTD. |
| | C10 | FILM CAPACITOR<br>50V 0.01 F | 1 | |
| | C107 | ELECTROLYTIC CAPACITOR<br>35V 560 F | 1 | |
| | C111, 130 | ELECTROLYTIC CAPACITOR<br>35V 82 F | 2 | |
| | C109 | ELECTROLYTIC CAPACITOR<br>35V 220 F | 1 | |
| | C105 | ELECTROLYTIC CAPACITOR<br>50V 180 F | 1 | |
| | C5 | ELECTROLYTIC CAPACITOR<br>400V 68 F | 1 | |
| | C4, 20, 21<br>C101, 102, | | | NOT MOUNTED |
| | C112, 151 | | | |
| | | | | |
| | L1 | INDUCTOR ELF18D290C | 1 | MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. |
| | L101 | INDUCTOR 150S | 1 | MURATA MFG. CO., LTD. |
| | | | | |
| | T1 | TRANSFORMER 2C44 | 1 | MURATA MFG. CO., LTD. |
| | | | | |
| | BEA1 | FERRITE BEADS | 1 | MURATA MFG. CO., LTD. |
| | BEA101 | FERRITE BEADS | 1 | MURATA MFG. CO., LTD. |
| | | | | |

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|---|---|
| issued: June 1998 | FX-051 MPW PARTS LIST (230V) |
| | MPW1446 3/4 (JPS-306) |
| Oki Data Corporation | JAPAN |

| Rev. | Symbol | Description | Q ty | Remarks |
|---|---|---|---|---|
| | F102 | FUSE AC125V 2.0A (19396) | 1 | WICKMANN-WERKE GMBH |
| | F103 | FUSE AC250V 0.2A (19396) | 1 | WICKMANN-WERKE GMBH |
| | F1 | FUSE AC250V T4.0AH (215) | 1 | LITTLEFUSE INC. |
| | | | | |
| | CN1 | CONNECTOR 5277-02A | 1 | MOLEX INC. |
| | CN101 | CONNECTOR S12B-XH-A-1 | 1 | JAPAN SOLDERLESS TERMINAL MFG. CO., LTD. |
| | CN2 | CONNECTOR B2P3-VH | 1 | JAPAN SOLDERLESS TERMINAL MFG. CO., LTD. |
| | | | | |
| | | PRINTED WIRING BOARD | 1 | |
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|---|---|
| issued: June 1998 | FX-051 MPW PARTS LIST (230V) |
| | MPW1446 4/4 (JPS-306) |
| Oki Data Corporation | JAPAN |


OKI CONFIDENTIAL
Oki Data Corporation
P2H
40599101SS

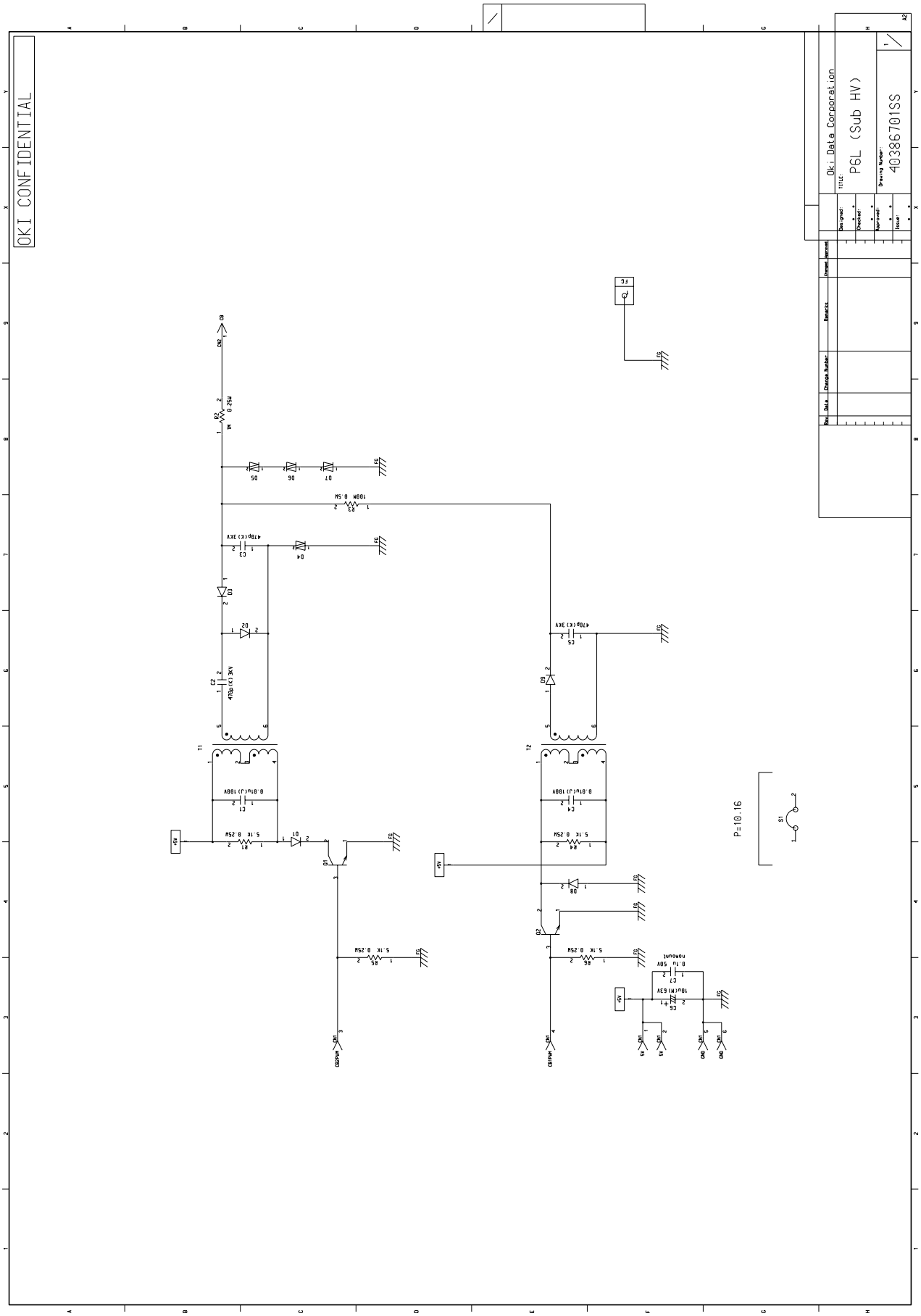
| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40599199 | PCB-P2H | 1 | |
| | | | | | |
| | D60, D61,<br>D68, D69 | 611A0003L0001 | 1S953/1S2075K/1S2473<br>D-Signal - | 4 | 4KH-31051-102 |
| | D63, D67<br>D72, D74 | 40681301 | OR-DHM/ESJA/SHV-06 | 4 | 4KH-31051-127 |
| | D51,<br>D55 - D59, | 6100003M0001 | EU02A/RL105F-F<br>D-Rectifying -Q | 9 | 4KH-31051-102 |
| | D62, D71,<br>D84 | | | | |
| | D52 | 613A2003M0001 | 1ZB300-Y-Z<br>D-Zener - | 1 | 4KH-31051-102 |
| | D65, D66 | 613A2258M0350 | 1ZB390<br>D-Zener - | 2 | 4KH-31051-102 |
| | D76 | 613A1231L0262B | RD22E-B2<br>D-Zener - | 1 | 4KH-31051-102 |
| | D82 | 613A1231L0282A | RD27E-B1<br>D-Zener - | 1 | 4KH-31051-102 |
| | D87 | 613A1231L0522 | RD200E-B<br>D-Zener - | 1 | 4KH-31051-102 |
| | D85 | 6132003M0001 | 1ZB270-Y/Z (TPA2)<br>D-Zener -Q | 1 | 4KH-31051-102 |
| | | | | | |
| | R234 | 321A1421J0330 | RD1/4Y33‰J<br>RES-Carbon flm - | 1 | 4KH-31051-127 |
| | R47, R48 | 321A1421J0131 | RD1/4Y130‰J<br>RES-Carbon flm - | 2 | 4KH-31051-127 |
| | R102, R116,<br>R121 | 321A1421J0331 | RD1/4Y330‰J<br>RES-Carbon flm - | 3 | 4KH-31051-127 |
| | R103, R123 | 321A1421J0102 | RD1/4Y1K‰J<br>RES-Carbon flm - | 2 | 4KH-31051-127 |
| | R118 | 321A1421J0472 | RD1/4Y4.7K‰J<br>RES-Carbon flm - | 1 | 4KH-31051-127 |
| | R122, R124<br>R229 | 321A1421J0512 | RD1/4Y5.1K‰J<br>RES-Carbon flm - | 3 | 4KH-31051-127 |
| | R105 | 321A1421J0243 | RD1/4Y24K‰J<br>RES-Carbon flm - | 1 | 4KH-31051-127 |
| | R104 | 321A1421J0753 | RD1/4Y75K‰J<br>RES-Carbon flm - | 1 | 4KH-31051-127 |
| | R235 | 3263103K0306 | MRH30MK/HV-22-30MK<br>RES-MET solid - | 1 | U |
| | R228, R233 | 321A1421J0105 | RD1/4Y1M‰J<br>RES-Carbon flm - | 2 | 4KH-31051-127 |
| | R100 | 321A1421J0305 | RD1/4Y3M‰J<br>RES-Carbon flm - | 1 | 4KH-31051-127 |
| | R115 | 323A1222F5763 | RNL1/4C3F576K‰<br>RES-MET RN - | 1 | 4KH-31051-127 |
| | R114, R236 | 3263103K0107 | MRH100MK/HV-38-100MK<br>RES-MET solid - | 2 | U |
| | R237 | 321A1421J0519 | RD1/4Y5.1‰J<br>RES-Carbon flm - | 1 | 4KH-31051-127 |
| | R238 | 3213420J0152 | RD16UJ1.5K‰<br>RES-Carbon flm - | 1 | U |

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|---|---|
| issued: June 1998<br>DCO No. SQ6-0141 | PCB Assy- P2H |
| | 40599101BT - 1/3 |
| Oki Data Corporation | JAPAN |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | C105, C107,<br>C119, C240, | 3024003K7471 | HNY5P/DE07-1KV-471K<br>CAP-Ceramic -P | 5 | |
| | C241 | | | | |
| | C113, C114<br>C117 | 3024203K2471 | DE07/HCYB3F471<br>CAP-Ceramic -Z | 3 | |
| | C112 | 302A4028K4471 | DE1010B471K6K 6KV<br>CAP-Ceramic - | 1 | |
| | C101, C102,<br>C106 | 3024003K6471 | HLY5P/DD05-500V-471K<br>CAP-Ceramic -P | 3 | |
| | C103, C104,<br>C108, C110, | 3034003Z3104 | MLRD/FK16Y5V1H104Z<br>CAP-Ceramic -N | 11 | |
| | C111, C115,<br>C237, C251, | | | | |
| | C300, C301,<br>C311 | | | | |
| | C116 | 3034003Z3473 | MLRD/FK16Y5V1H473Z<br>CAP-Ceramic -N | 1 | |
| | C118 | 3064003J2103 | MY2A/CQMF/ECQP-103J<br>CAP-Plast flm -P | 1 | |
| | C302, C310 | 3064003J2472 | CQMF/MY2A/ECQP-472J<br>CAP-Plast flm -P | 2 | |
| | C236 | 3041003J1100 | UVX/SME-63V-10 F 63V<br>CAP-Alum (CE) -P | 1 | |
| | | | | | |
| | Q11, Q13 | 622A0003M0001 | BCR1AM-12/MAC97-008<br>THY-Bi/Dir - | 2 | |
| | Q12 | 620A0022M0008 | CR04AM-12<br>THY-Gate - | 1 | |
| | Q21, Q22,<br>Q23 | 602A1025M0006Y | 2SC1815-Y<br>TR-NPN/H-FREQ - | 3 | |
| | Q15, Q16,<br>Q17 | 602A1125M0039Y | 2SC2235-Y<br>TR-NPN/H-FREQ - | 3 | |
| | Q10 | 602A1223M0039 | 2SC2752<br>TR-NPN/H-FREQ - | 1 | |
| | | | | | |
| | L10 | 3502003P0102 | C-14576/SA-8506183<br>Coil-Choke - | 1 | U |
| | | | | | |
| | T2, T3, T4 | YB4049-7078P003 | HIGH VOLTAGE TRANSFORMER | 3 | |
| | | | | | |
| | PS1, PS2,<br>PS3, PS4 | 652A0103M0002 | RPI-574/#9568<br>PHOTO-Coupler - | 4 | MW |
| | | | | | |
| | CVSW | 2071003P0001 | SM05S/SS5GL13<br>Switch-Micro - | 1 | UMW |
| | | | | | |
| | LED | 6500003M0001 | SEL3910D/204AD<br>PHOTO-LED - | 1 | |

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | CN1 | 224A4134P0230 | 23FE-BT-VK-N<br>Connector-PCB - | 1 | U |
| | CN2 | 224A4407P0020 | 53254-0210<br>Connector-PCB | 1 | U |
| | | | | | |
| | J1, J2, J40 | TA-0.6 | SHORT WIRE | 3 | L=55mm<br>P=5.0 |
| | J3, J4,<br>J7 - J12 | TA-0.6 | SHORT WIRE | 8 | L=55mm<br>P=7.5 |
| | J13 - J21<br>J23 - J27 | TA-0.6 | SHORT WIRE | 22 | L=55mm<br>P=10.0 |
| | J29 - J36 | | | | |
| | J22 | TA-0.6 | SHORT WIRE | 1 | L=55mm<br>P=12.5 |
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| issued: June 1998<br>DCO No. SQ6-0141 | PCB Assy- P2H |
| | 40599101BT - 3/3 |
| Oki Data Corporation | JAPAN |


OKI CONFIDENTIAL
Oki Data Corporation
TITLE:
PSL (Sub HV)
Drawing Number:
40386701SS
Issue:
Approved:
Checked:
Designed:
Remarks
Change Number
Date
Rev.
P=10.16

| Rev. | Symbol | Oki Part Number | Description | Q ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40386799 | PCB-P6L | 1 | |
| | | | | | |
| | D1, D8 | 6100003M0001 | EU02A/RL105F-F<br>D-Rectifying -Q | 2 | 4KH-31051-102 |
| | D2, D3, D9 | 40681301 | OR-DHM/ESJA/SHV-06 | 3 | 4KH-31051-157 |
| | D4 | 6320229M0003 | ERZV05D391<br>SEMICO-Vari - | 1 | |
| | D5, D6, D7 | 6320003M0001 | ERZ/JVR-05N471<br>SEMICO-Vari - | 3 | |
| | | | | | |
| | R1, R4, R5, R6 | 3213420J0512 | RD16U/VTJ5.1K‰<br>RES-Carbon flm - | 4 | |
| | R2 | 321A1421J0105 | RD1/4Y1M‰J<br>RES-Carbon flm - | 1 | 4KH-31051-127 |
| | R3 | 3263103K0107 | MRH100MK/HV-38-100MK<br>RES-MET solid - | 1 | |
| | | | | | |
| | C1, C4 | 3064003J2103 | MY2A/CQMF-100V-103J<br>CAP-Plast flm -P | 2 | |
| | C2, C3, C5 | 3024203K2471 | DE07/HCYB3F471<br>CAP-Ceramic -Z | 3 | |
| | C6 | 3041003J1100 | UVX/SME-63V-10 F 63V<br>CAP-Alum (CE) -P | 1 | |
| | | | | | |
| | S1 | TA-0.6 | SHORT WIRE | 1 | L=55mm<br>P=10.16mm |
| | | | | | |
| | Q1, Q2 | 602A1125M0039Y | 2SC2235-Y<br>TR-NPN/H-FREQ | 2 | |
| | | | | | |
| | T1, T2 | YB4049-7078P003 | HIGH VOLTAGE TRANSFORMER | 2 | |
| | | | | | |
| | CN1 | 2244101P0060 | 06FE-ST-VK-N<br>Connector-PCB | 1 | |
| | CN2 | 2247000P0001 | RT-01T-1.0B<br>Connector-PCB | 1 | |
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| issued: June 1998<br>DCO No. SQ6-0148 | PCB Assy- P6L |
| | 40386701BT - 1/1 |
| Oki Data Corporation | JAPAN |

# Appendix D

# Mechanical Expanded View Drawing and Parts List

# (OKIOFFICE84/OKIFAX 4500)

## Third Edition

## April, 1999

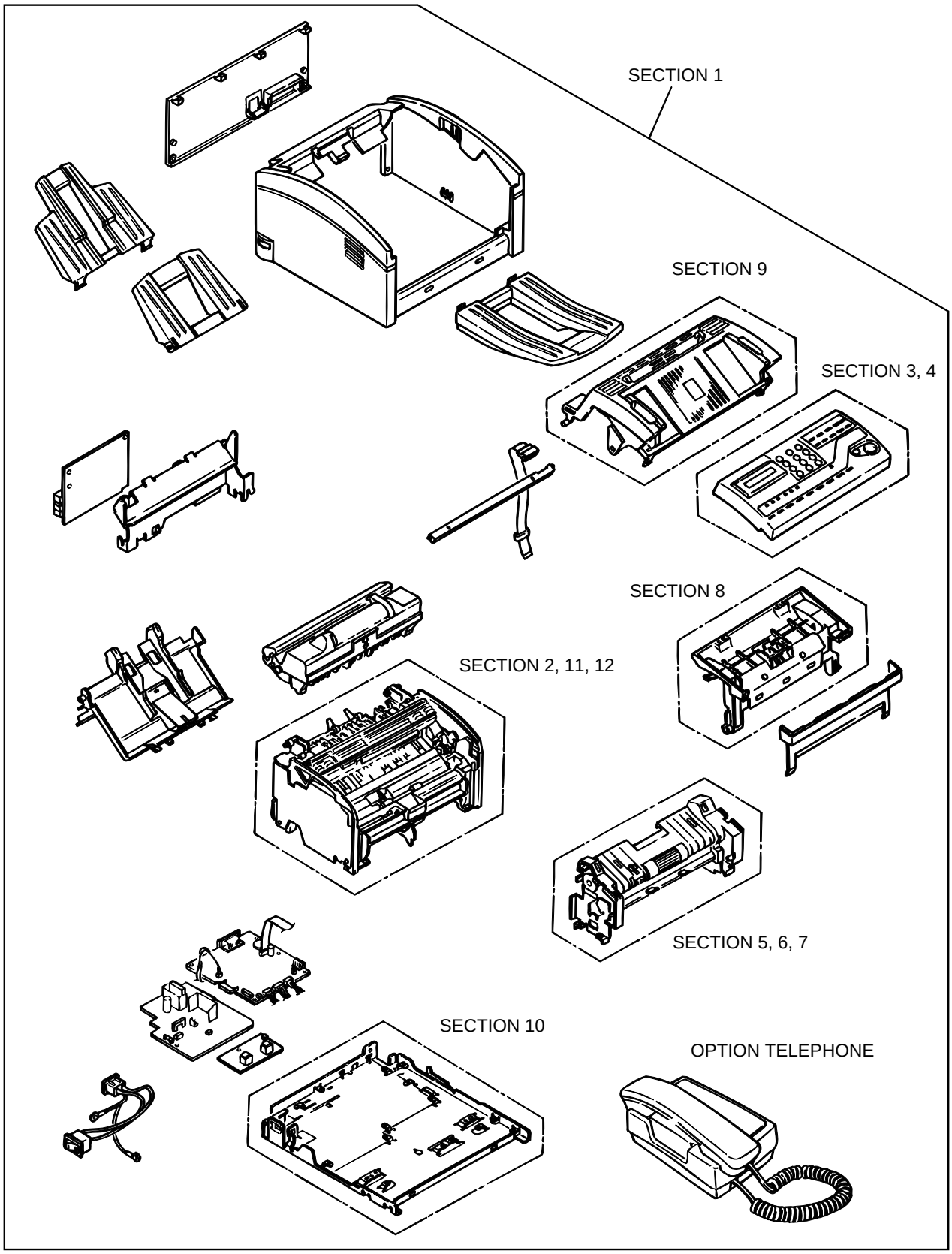
## Oki Data Corporation

# CONTENTS

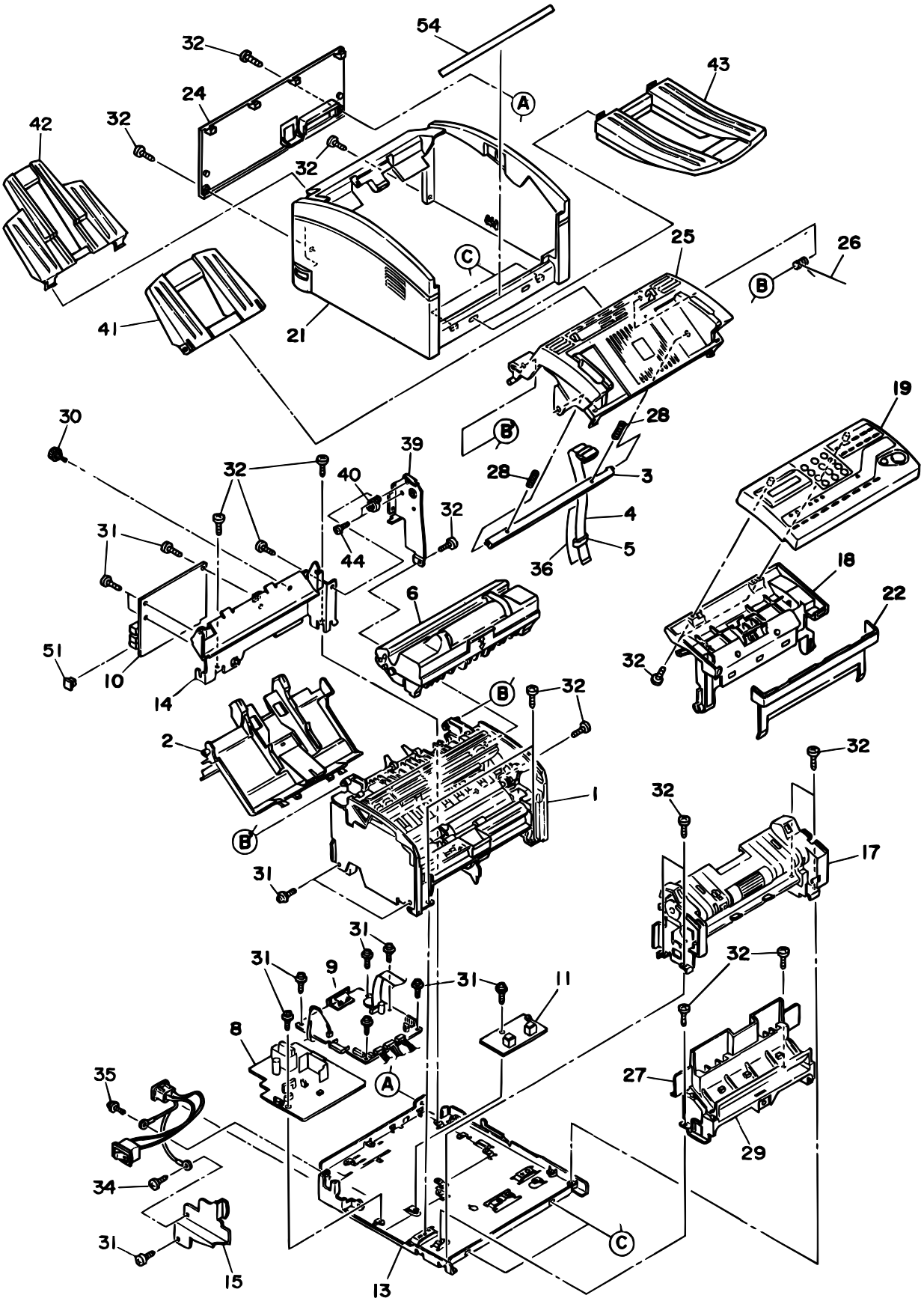

| | Page | |
|---|---|---|
| | Drawing | Parts Lists |
| **Section 1 Cabinet Assembly** | **D-2** | **D-3, 4** |
| **Section 2 Unit-Printer** | **D-5** | **D-6** |
| **Section 3 Unit-048 Opepanel** | **D-7** | **D-8** |
| **Section 4 Opepanel Assembly** | **D-9** | **D-10** |
| **Section 5 Frame Assembly-Scanner (L)** | **D-11** | **D-12** |
| **Section 6 Plate Assembly-Scanner (B)** | **D-13** | **D-14** |
| **Section 7 Plate Assembly-Scanner (R)** | **D-15** | **D-16** |
| **Section 8 Frame Assembly-Scanner (U)** | **D-17** | **D-18** |
| **Section 9 Cover Assembly-Top** | **D-19** | **D-20** |
| **Section 10 Plate Assembly-Base** | **D-21** | **D-22** |
| **Section 11 Printer Base Frame Unit** | **D-23** | **D-24, 25** |
| **Section 12 Printer Heat Assy** | **D-26** | **D-27** |
| **Section 13 Cables** | **D-28** | **D-29** |


Note 1: The blank columns of parts lists show the parts/units not treated as spare parts due to reasons as follows:
1) Item No. omitted.
2) Shown in other sections.
3) Consumables (Including screws).
4) Unified and inseparable parts/unit.

## OKIOFFICE84/OKIFAX4500 ASSEMBLY



## SECTION 1 CABINET ASSEMBLY (FAX NIP-FX051)



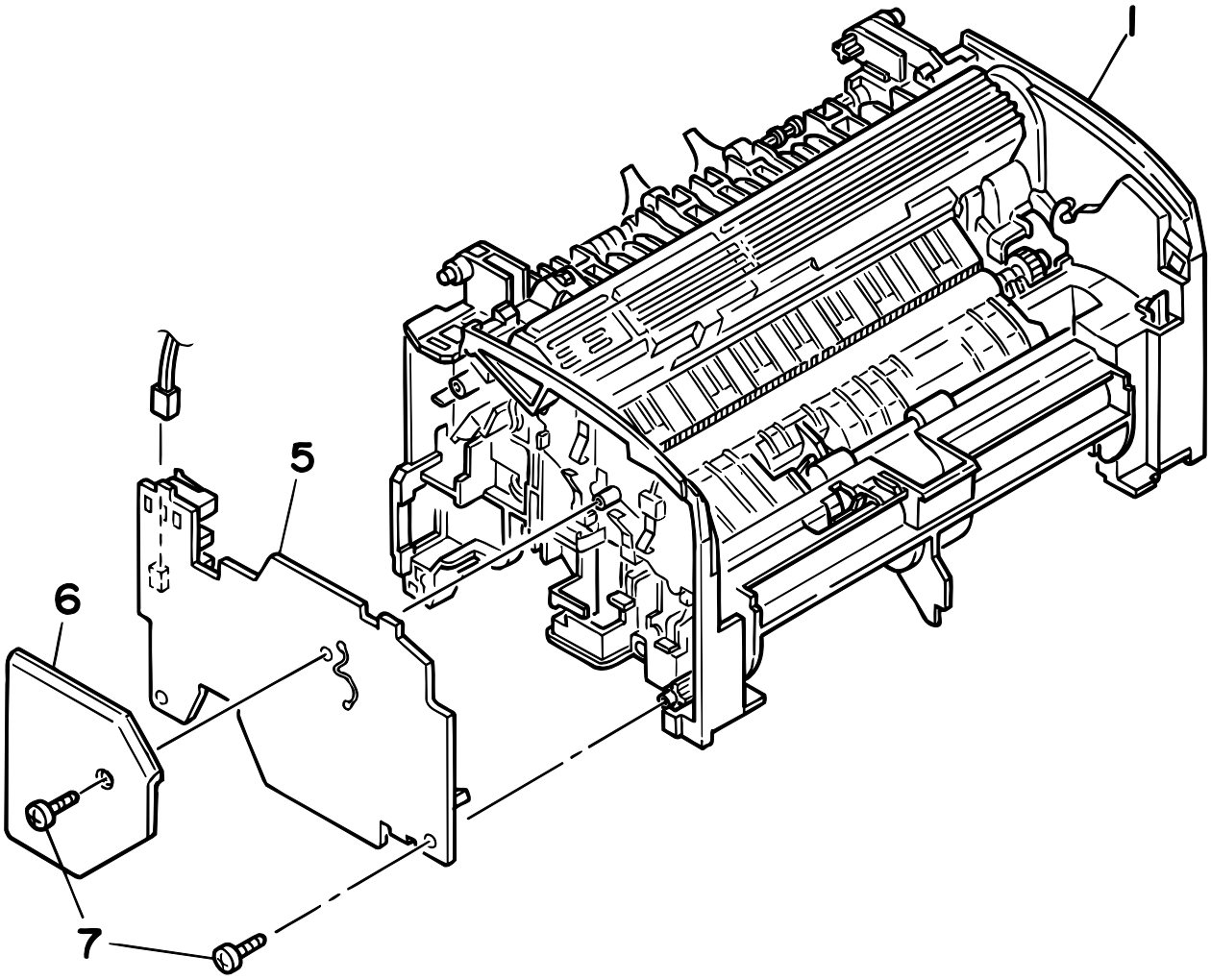
## Section 1 CABINET ASSEMBLY (FAX NIP-FX051) 1/2

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Unit-Printer | | Refer to Section 11 |
| | 2 | | HOLDER-ASSY | | Refer to Section 11 |
| | 3 | 4YA4116-1228G001 | LED HEAD General specification-31B | 1 | |
| | 4 | 4YX4083-1134G001 | CABLE FLAT ASSY. | 1 | |
| | 5 | | | | Refer to Section 13 |
| | 6 | | EP Unit Specification | 1 | Consumable |
| | 7 | | | | |
| | 8a | 40588801 | DC POWER SUPPLY UNIT | 1 | |
| | 8b | 40588901 | DC POWER SUPPLY UNIT | 1 | |
| | 9 | 40687601 | Board-R51 | 1 | |
| | 10a | 40044501 | Board-UNC | 1 | US |
| | 10b | 40044401 | Board-FN5 | 1 | UK, FRANCE |
| | 10c | 40044101 | Board-DN5 | 1 | GER |
| | 10d | 40044303 | Board-WN5 | 1 | OEL-INT |
| | 10e | 40044307 | Board-WN5 | 1 | OKI-INT |
| | 11 | 40605601 | H.V. Board P6L | 1 | |
| | | | | | |
| | 13 | 40672901 | Plate Assy.-Base (A) | 1 | |
| | 14 | 40023901 | Bracket-Package | 1 | |
| | 15 | 40236401 | Plate Assy. - Shield (HV) | 1 | |
| | | | | | |
| | 17 | 40019203 | Frame Assy.-Scanner L | 1 | 300dpi |
| | 18 | 40021002 | Frame Assy.-Scanner (U) | 1 | |
| | 19 | | OPE Panel Assy. | 1 | Refer to Section 3, 4 |
| | | | | | |
| | 21a | 40606501 | Cover-Main (A) | 1 | |
| | 21b | 40606502 | Cover-Main (A) | 1 | Bosch |
| | 22a | 40025301 | Cover-Front | 1 | |
| | 22b | 40025302 | Cover-Front | 1 | Bosch |
| | 24a | 40606601 | Cover-Rear (A) | 1 | |
| | 24b | 40606602 | Cover-Rear (A) | 1 | Bosch |
| | 25a | 40672801 | Cover Assy.-Top (A) | 1 | |
| | 25b | 40672802 | Cover Assy.-Top (A) | 1 | Bosch |
| | 26 | 40026101 | Spring-TC | 1 | |

## Section 1 CABINET ASSEMBLY (FAX NIP-FX051) 2/2

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 27 | 40024001 | Guide-Paper (U) | 1 | |
| | 28 | 4PP4083-6168P001 | HEAD Spring | 2 | |
| | 29 | 40024101 | Guide-Paper (L) | 1 | |
| | | | | | |
| | 31 | | B Tapping Screw | | |
| | 32 | | B Tapping Screw FA | | |
| | 33 | | B Screw B | | |
| | 34 | | Screw | | |
| | | | | | |
| | 35 | | Screw | 1 | |
| | 36 | 40773601 | Sheet-Shield (LED) | 1 | |
| | | | | | |
| | | | | | |
| | 39 | 40140801 | Bracket-Damper | 1 | |
| | 40 | 40148201 | Gear-Damper | 1 | |
| | 41a | 40025701 | Tray-Document | 1 | |
| | 41b | 40025702 | Tray-Document | 1 | Bosch |
| | 42a | 40025801 | Tray-Paper | 1 | |
| | 42b | 40025802 | Tray-Paper | 1 | Bosch |
| | 43a | 40375801 | Stacker Assy.-Document | 1 | |
| | 43b | 40375802 | Stacker Assy.-Document | 1 | Bosch |
| | 44 | | Screw-Tapping (S-M2) | | |
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| | | | | | |
| | 50 | NB3201-1211P001 | CARRIER SHEET | 1 | GER, Bosch |
| | 51 | 223A7010P0003 | TM-6-DC1 Connector-Plug | 1 | GER, Bosch |
| | | | | | |
| | | | | | |
| | 54 | 40332701 | Label-Manual Slot | 1 | For OKIOFFICE84 |

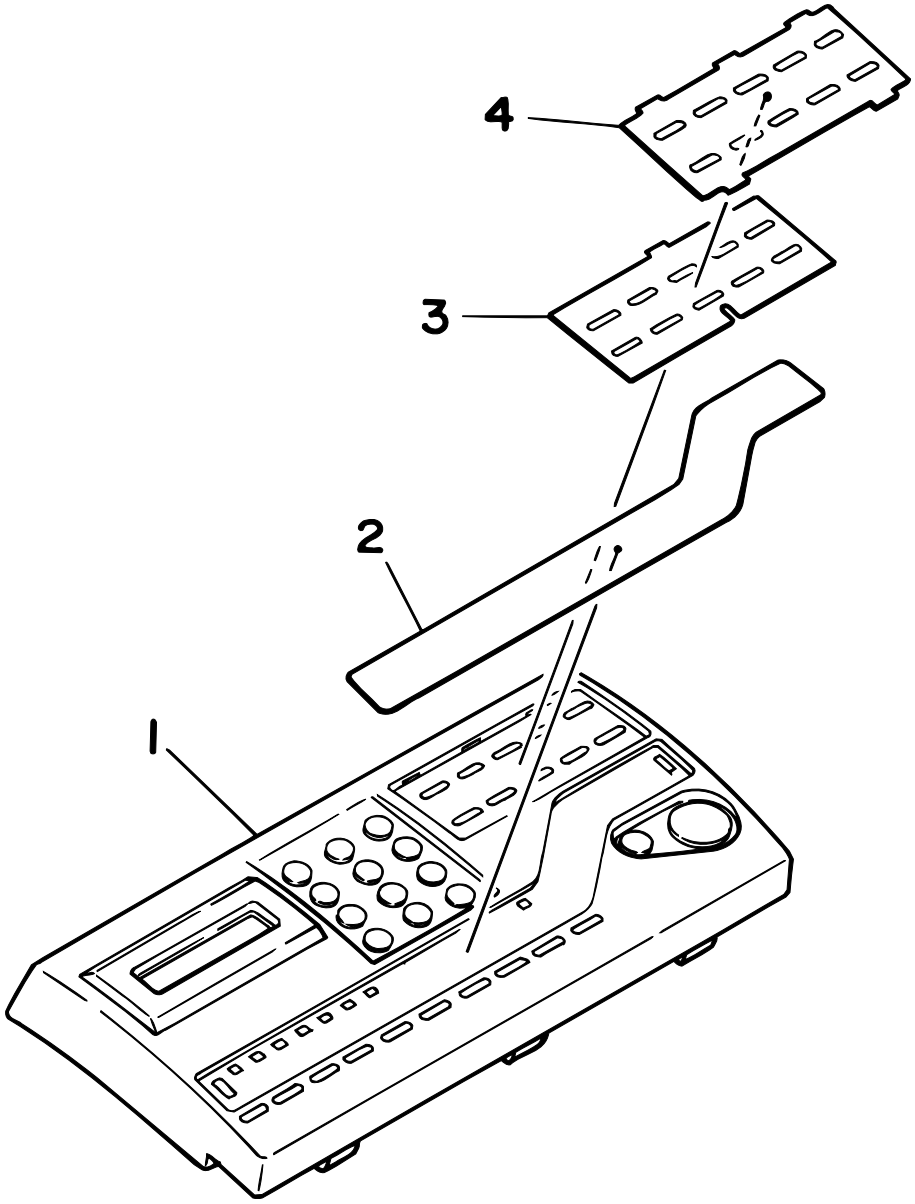
## SECTION 2 UNIT-PRINTER



## Section 2 UNIT-PRINTER

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Printer Unit Assembly | | See Section 11 |
| | | | | | |
| | | | | | |
| | | | | | |
| | 5 | 40607401 | H.V. Board P2H | 1 | |
| | 6 | 40413401 | Cover-HV | 1 | |
| | 7 | | Screw F | | |
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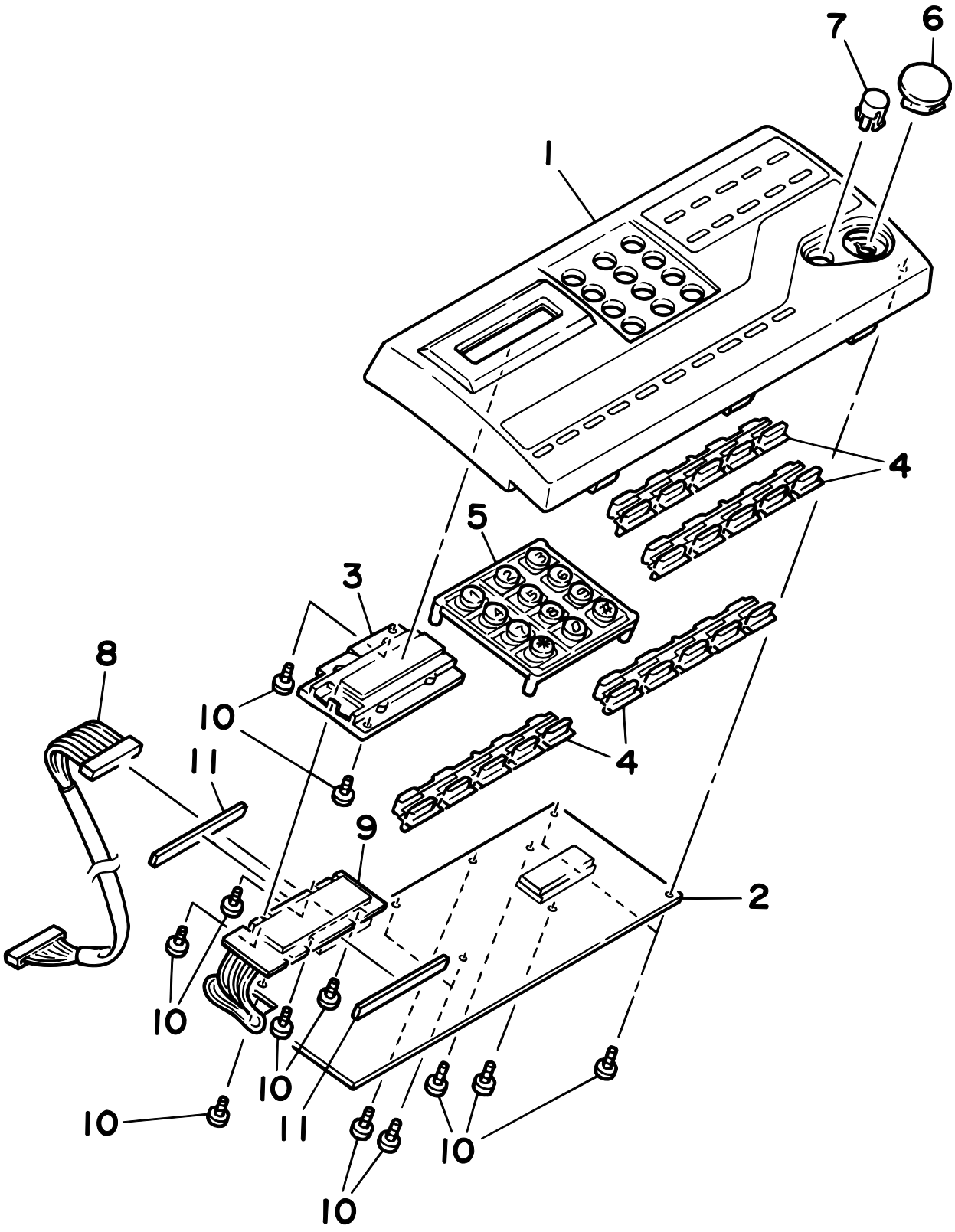
## SECTION 3 UNIT-051 OPE PANEL



## Section 3 UNIT-051 OPE PANEL

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1a | 40712201 | OP Panel Assy. | 1 | ODA/OKI-INT/OEL |
| | 1b | 40712203 | OP Panel Assy. | 1 | LANIER |
| | 1c | 40712204 | OP Panel Assy. | 1 | Bosch |
| | 2a | 00073313 | Sheet-F-051 | 1 | OEL-INT/OKI-INT |
| | 2b | 00073320 | Sheet-F-051 | 1 | ODA |
| | 3 | 00073413 | Sheet-O-051 | 1 | ODA/OEL-INT/OKI-INT |
| | 4 | 40023601 | Sheet-Cover | 1 | |
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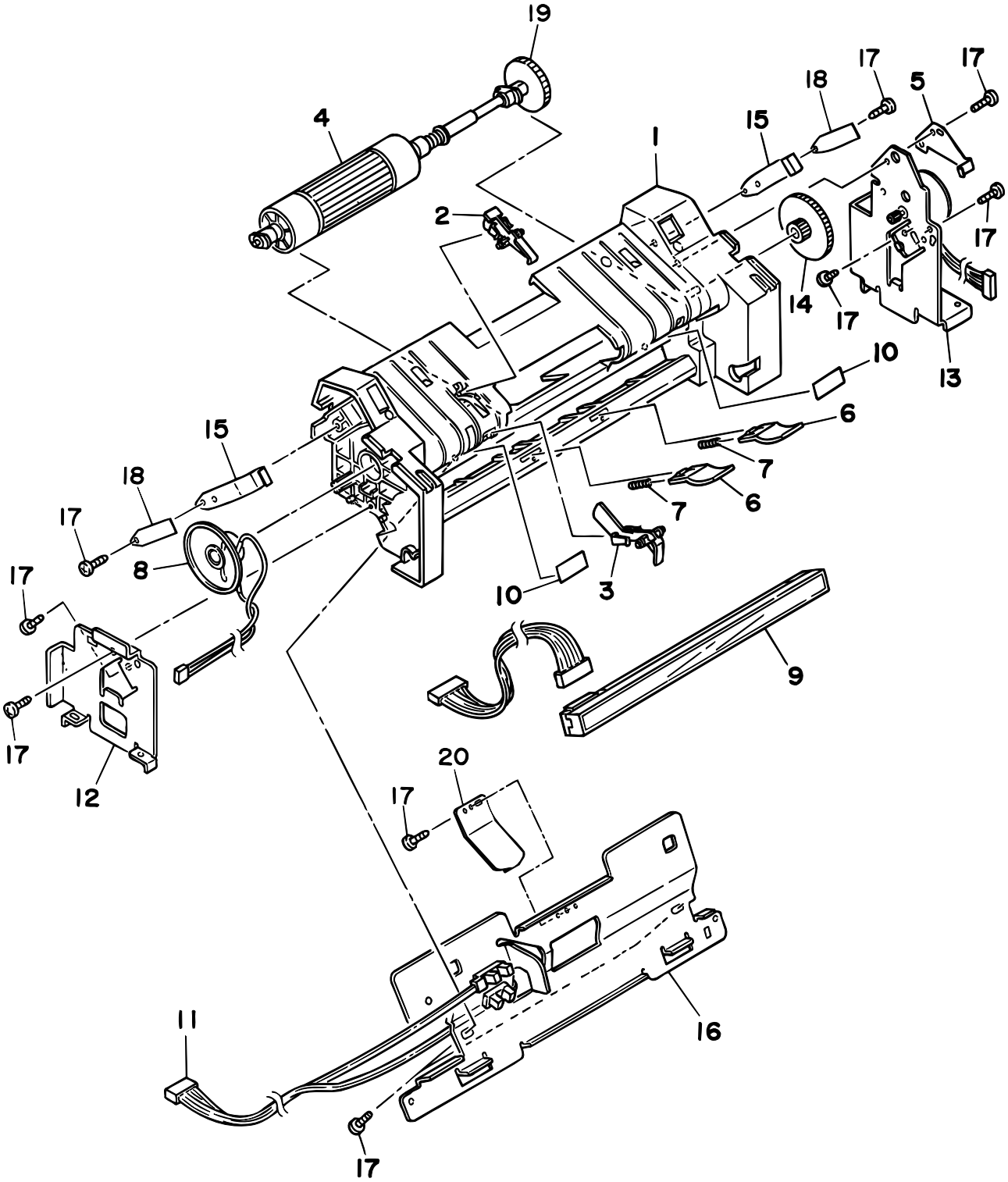
## SECTION 4 OPEPANEL (OPERATION PANEL) ASSEMBLY



## Section 4 OPE PANEL ASSEMBLY

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Case-OPE(T) | | |
| | 2 | 40086701 | Board-04W | 1 | |
| | 3 | | Holder-LCD | | |
| | 4 | | Button-Function | | |
| | 5 | PP4120-1067P001 | Ten Key (Round) | 1 | |
| | 6a | 40023201 | Button-Start | 1 | OKI, Bosch |
| | 6b | 40023202 | Button-Start | 1 | LANIER |
| | | | | | |
| | 7a | 40023301 | Button-Stop | 1 | OKI, Bosch |
| | 7b | 40023302 | Button-Stop | 1 | LANIER |
| | | | | | |
| | | | | | |
| | 9 | 4YB4134-1009P001 | LCD | 1 | |
| | 10 | | B SCREW A | | |
| | 11 | 4PB4120-1113P001 | Rubber Connector | 2 | |
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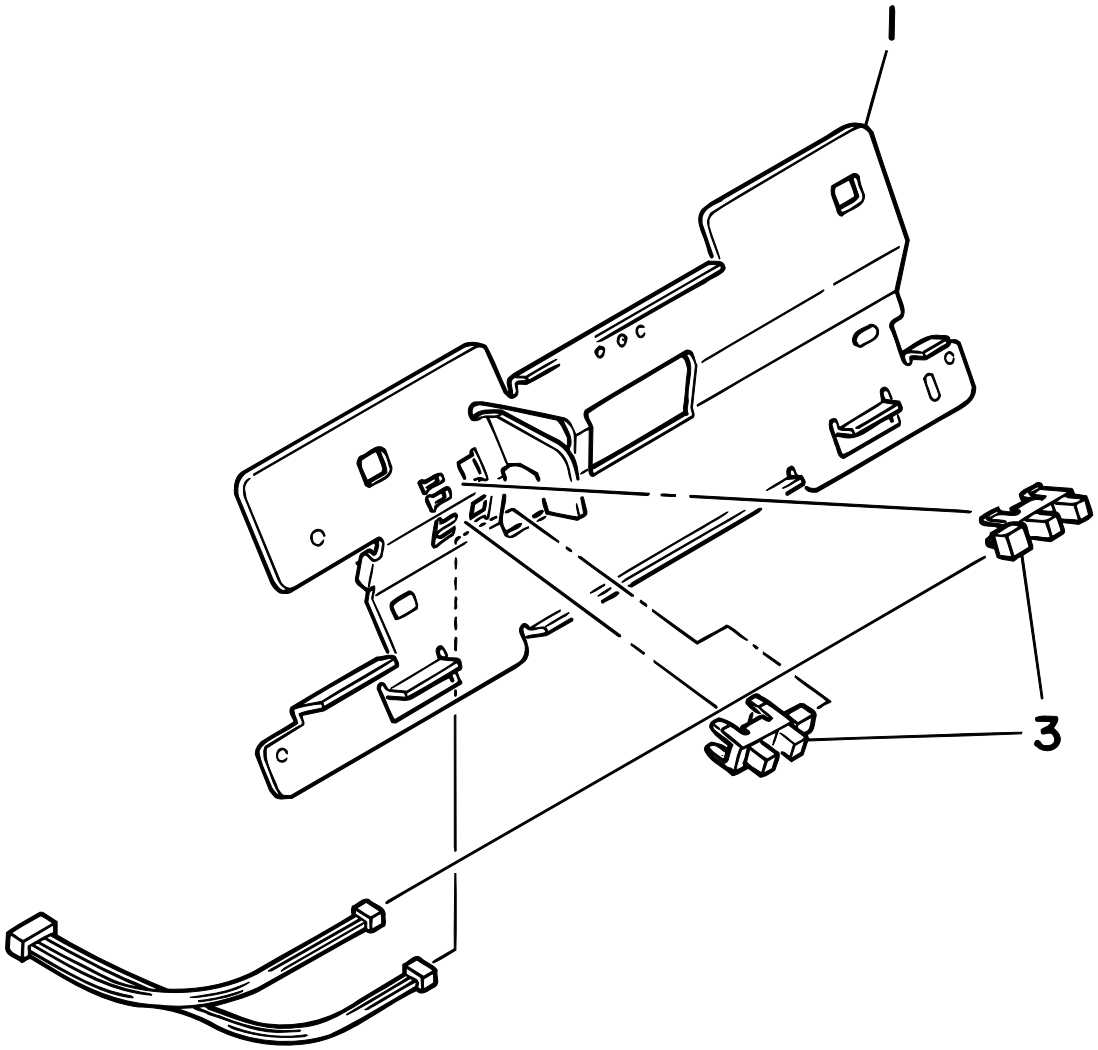
## SECTION 5 FRAME ASSEMBLY-SCANNER (L)



## Section 5 FRAME ASSEMBLY-SCANNER L

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Frame-Scanner (L) | | |
| | 2 | 40019401 | Lever-PC1 | 1 | |
| | 3 | 40019501 | Lever-PC2 | 1 | |
| | 4 | 40019601 | Roller Assy.-ADF | 1 | |
| | 5 | 40020201 | Plate-Earth ADF | 1 | |
| | 6 | 40020601 | Piece-Exit | 2 | |
| | 7 | 40020703 | Spring-Exit | 2 | |
| | 8 | 40127501 | CONN Cord-Speaker | 1 | |
| | 9 | 40141401 | CONTACT IMAGE SENSOR-A4 | 1 | 300dpi |
| | 10 | 40644701 | Film-Guide (CIS) | 2 | |
| | 11 | | | | Refer to Section 13 |
| | 12 | | Plate-Scanner (L) | | |
| | 13 | | Plate Assy.-Scanner (R) | | |
| | 14 | 40020301 | Gear-Z95/14 | 1 | |
| | 15 | 40020501 | Spring-Latch | 2 | |
| | 16 | | Plate Assy.-Scanner (B) | | |
| | 17 | | B Screw FA | | |
| | 18 | 40153801 | Spring-Reinforcement | 2 | |
| | 19 | 40025201 | Gear-Z38 | 1 | |
| | 20 | 40024501 | Spring-CIS | 1 | |
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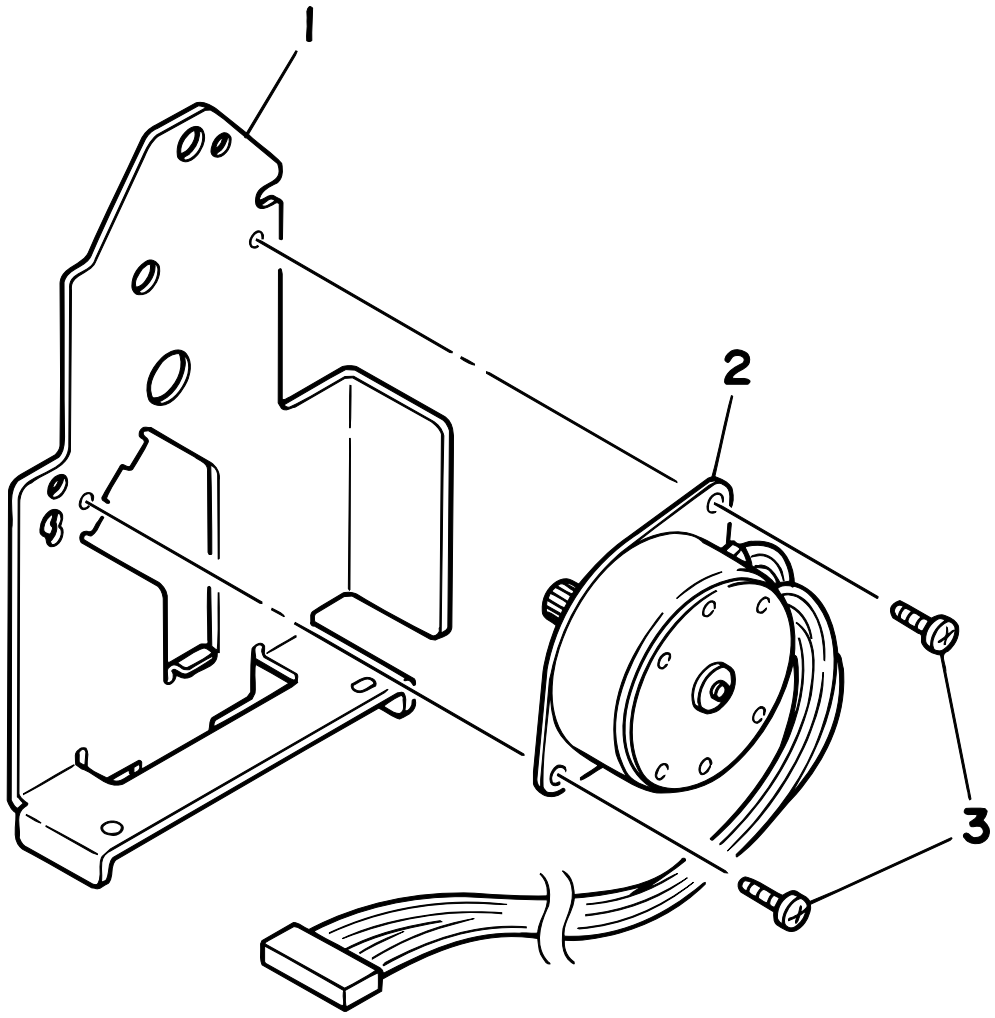
## SECTION 6 PLATE ASSEMBLY-SCANNER (B)



## Section 6 PLATE ASSEMBLY-SCANNER (B)

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Plate-Scanner (B) | | |
| | | | | | |
| | 3 | 4YB4120-1137P001 | PHOTO SENSOR | 2 | |
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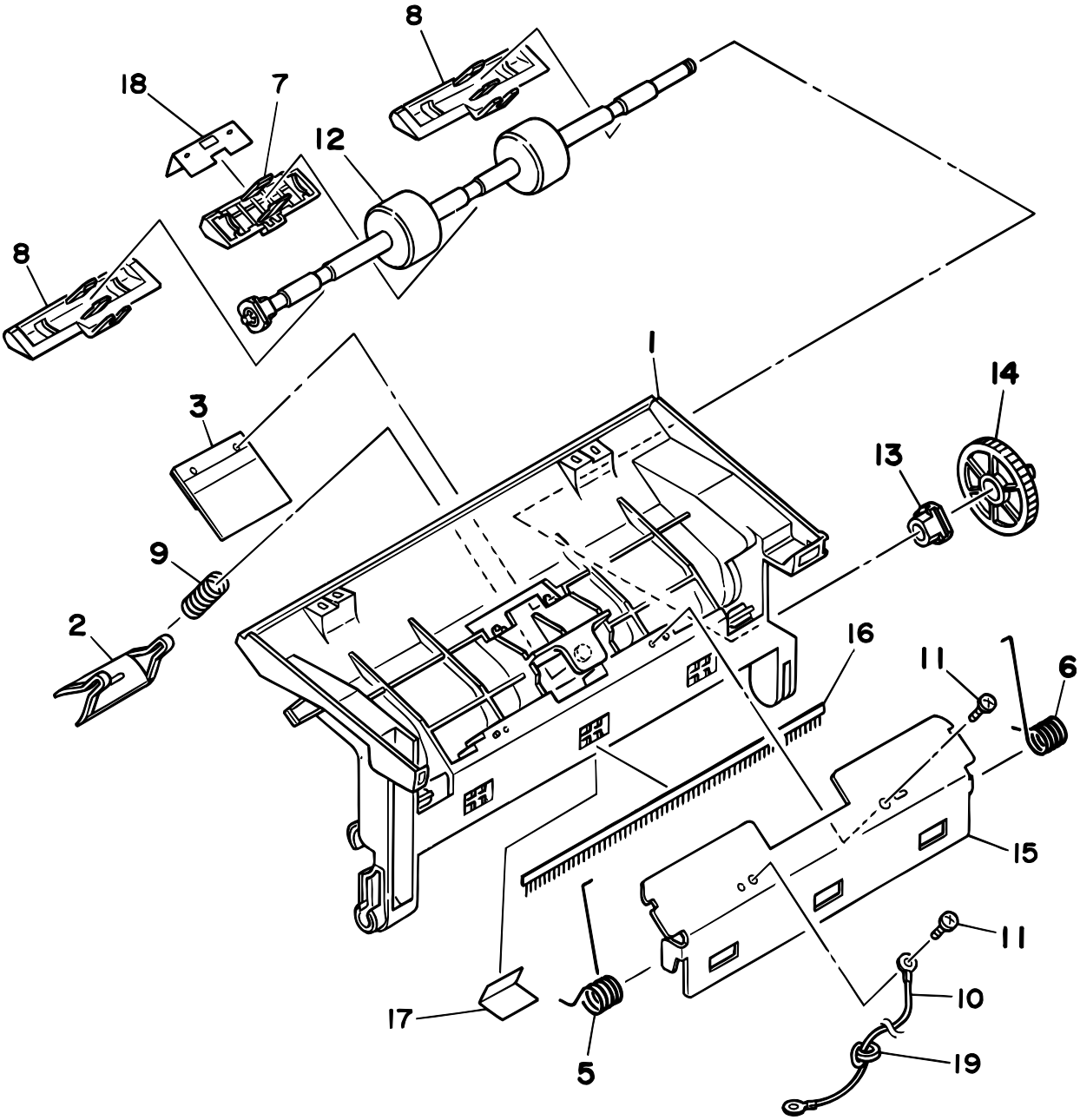
## SECTION 7 PLATE ASSEMBLY-SCANNER (R)



## Section 7 PLATE ASSEMBLY-SCANNER (R)

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Plate-Scanner (R) | | |
| | 2 | 4YB4120-1036P001 | S-Motor 151/175 | 1 | |
| | 3 | | B SCREW FA | | |
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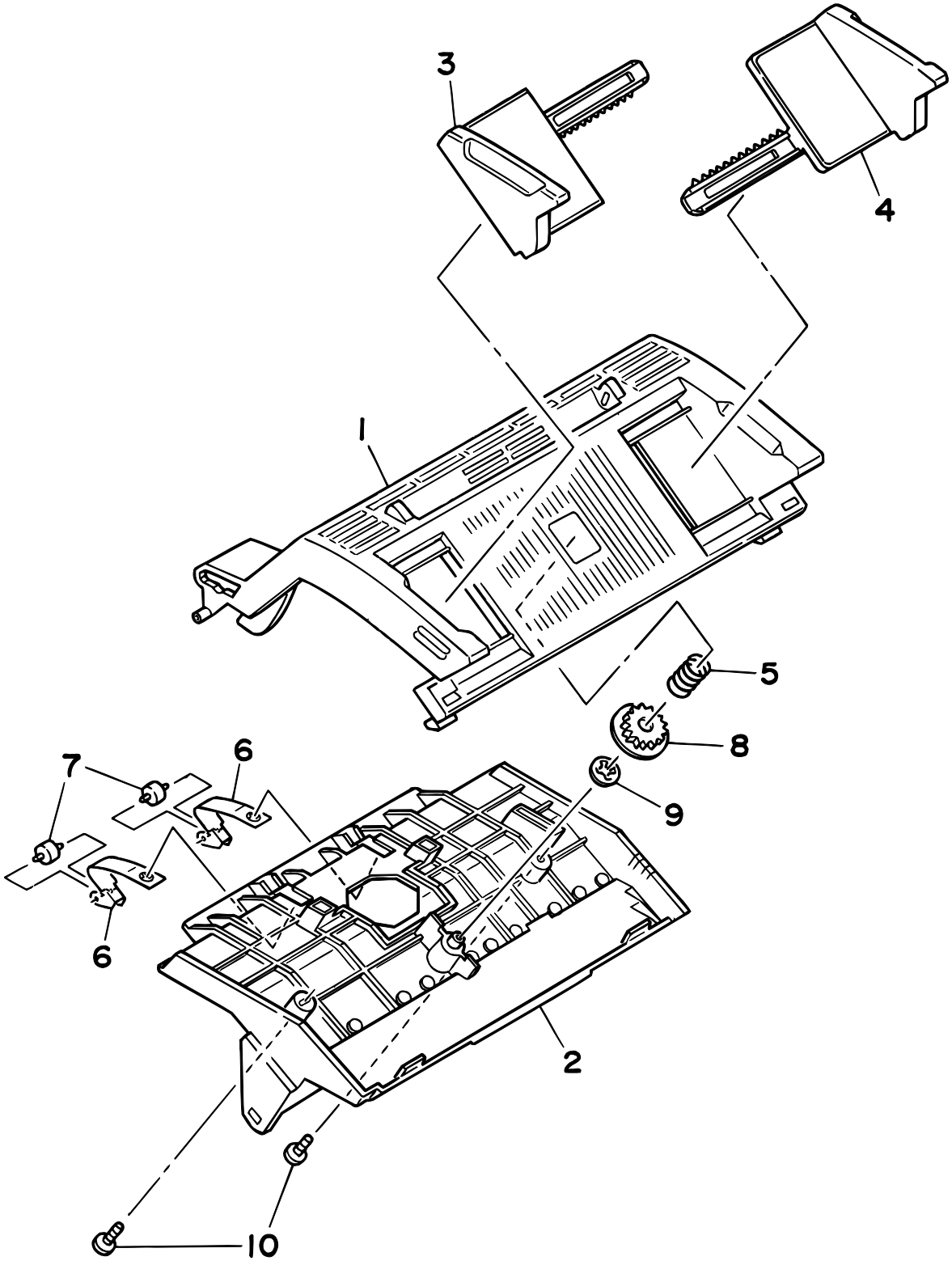
## SECTION 8 FRAME ASSEMBLY-SCANNER (U)



## Section 8 FRAME ASSEMBLY-SCANNER (U)

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Frame-Scanner (U) | | |
| | 2 | 4PP3527-5153P001 | BACK-UP PLATE | 1 | |
| | 3 | 40267001 | SEPARATION RUBBER ASSEMBLY | 1 | |
| | | | | | |
| | 5 | 40021401 | Spring-Pinch (L) | 1 | |
| | 6 | 40021501 | Spring-Pinch (R) | 1 | |
| | 7 | 40745801 | Guide-Sensor (A) | 1 | |
| | 8 | 40021701 | Guide-Sensor (B) | 2 | |
| | 9 | 40481101 | ADF SPRING | 1 | |
| | 10 | 40199101 | Cord-Earth | | |
| | 11 | | B SCREW FA | | |
| | 12 | 40021202 | Roller Assy.-Sensor | 1 | |
| | 13 | 40022001 | Bearing-S | 1 | |
| | 14 | 40020801 | Gear-Z31 | 1 | |
| | 15 | | Plate-Support | 1 | |
| | 16 | 40026301 | Bar-Discharge | 1 | |
| | 17 | 40461301 | Film-Exit (DOC) | 1 | |
| | 18 | 40745901 | Film-Guide (A) | 1 | |
| | 19 | 1051002C0001 | TR-13-7-6 Core | 1 | Except ODA |
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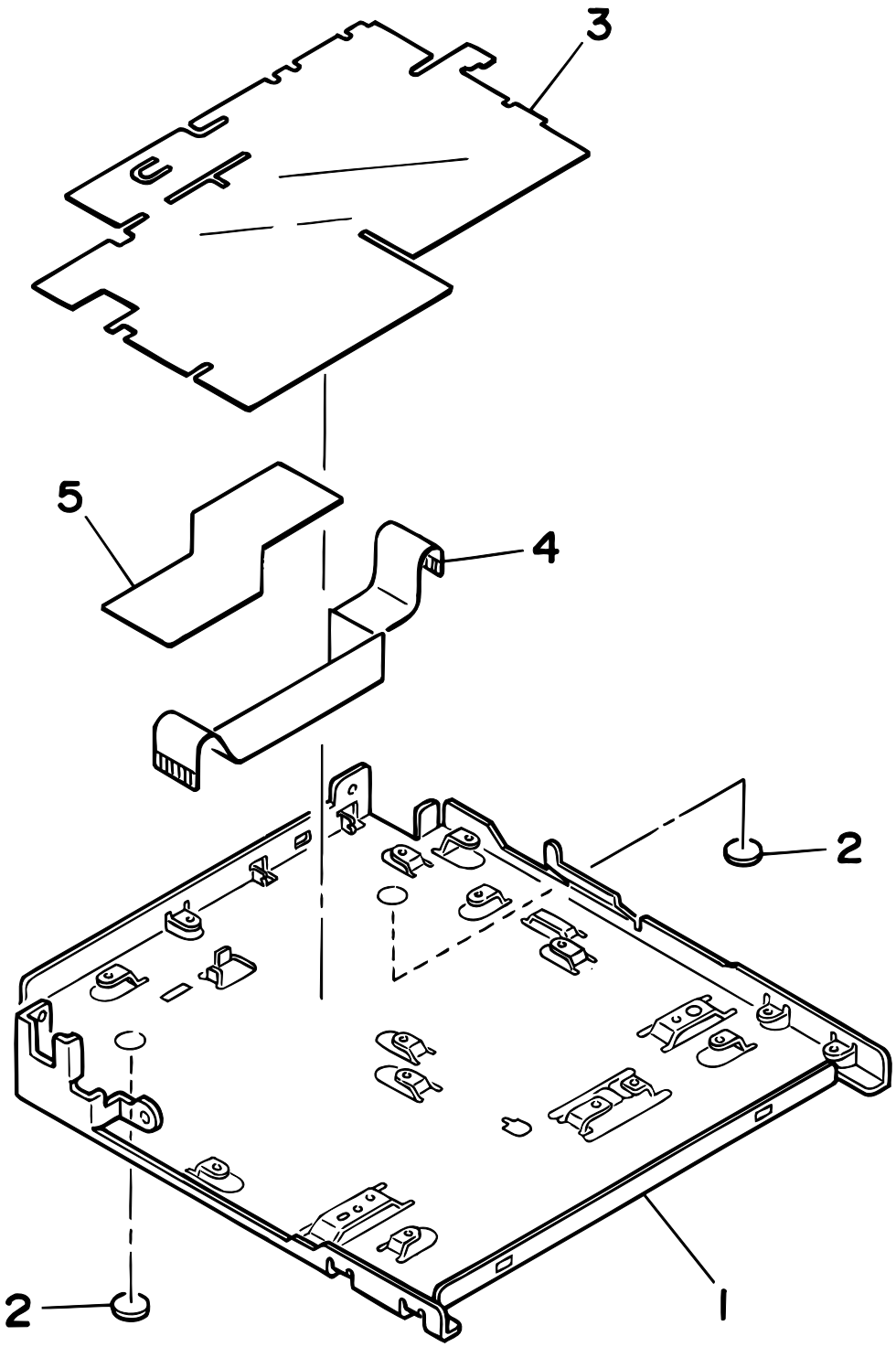
## SECTION 9 COVER ASSEMBLY-TOP



## Section 9 COVER ASSEMBLY-TOP

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Cover-Top | | |
| | 2 | 40606701 | Holder-LED (A) | 1 | |
| | 3 | | Guide-Document (L) | | |
| | 4 | | Guide-Document (R) | | |
| | 5 | 40022601 | Spring-D | 1 | |
| | 6 | 4PP4128-1268P001 | PLATE EXIT | 2 | |
| | 7 | 4PP4083-2024P001 | EJECT ROLLER A | 2 | |
| | 8 | 4PP4083-2328P003 | PINION GEAR B | 1 | |
| | 9 | | CS RING | | |
| | 10 | | B SCREW FA | | |
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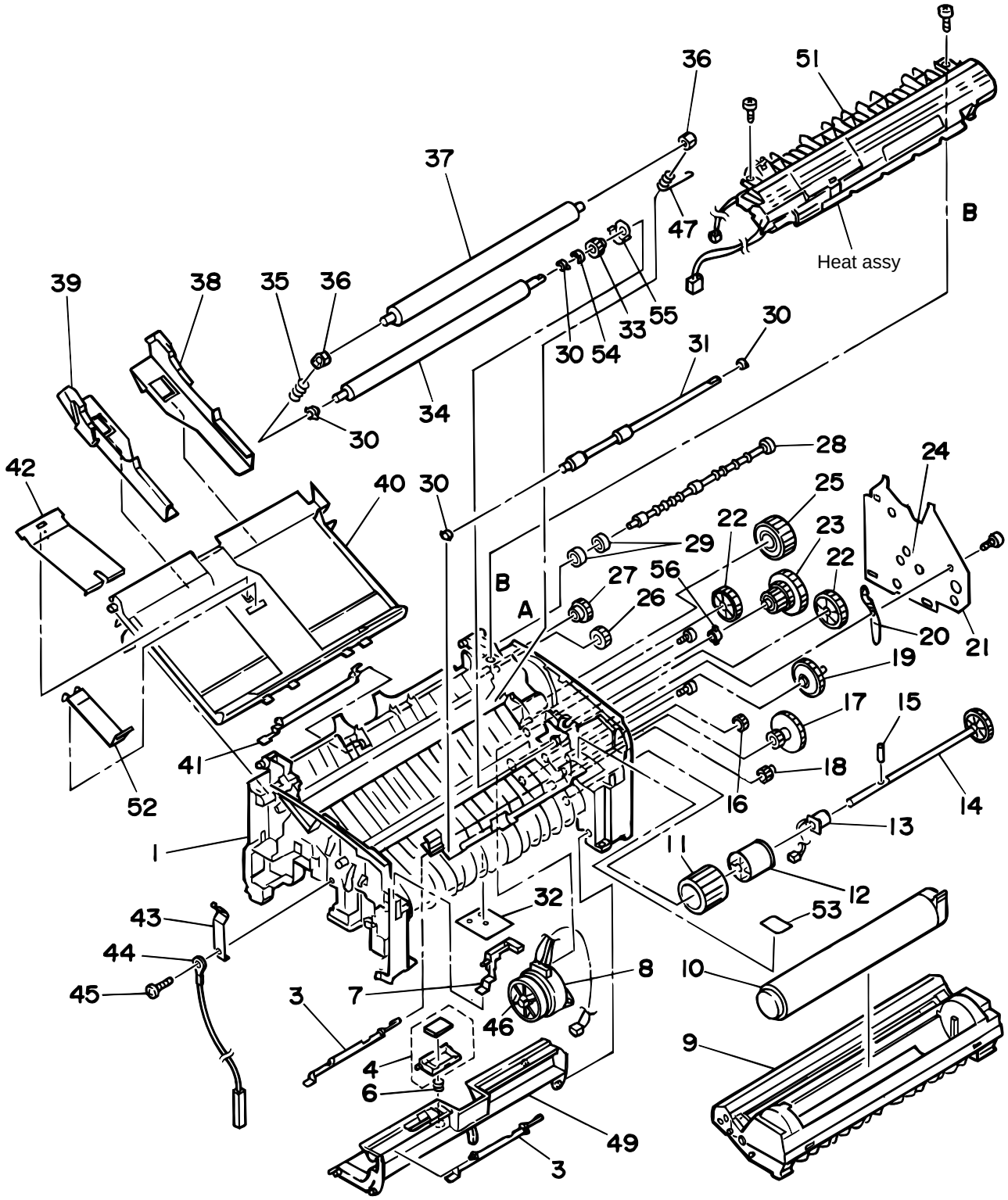
## SECTION 10 PLATE ASSEMBLY-BASE



## Section 10 PLATE ASSEMBLY-BASE

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | | Plate-Base | | |
| | 2 | | RUBBER A | | |
| | 3 | 40606901 | Sheet-Insulation | 1 | |
| | 4 | 40128001 | Cord-Falt (FUJI CARD) | 1 | |
| | 5 | | Sheet-FG | | |
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## SECTION 11 PRINTER BASE FRAME UNIT



## Section 11 PRINTER BASE FRAME UNIT 1/2

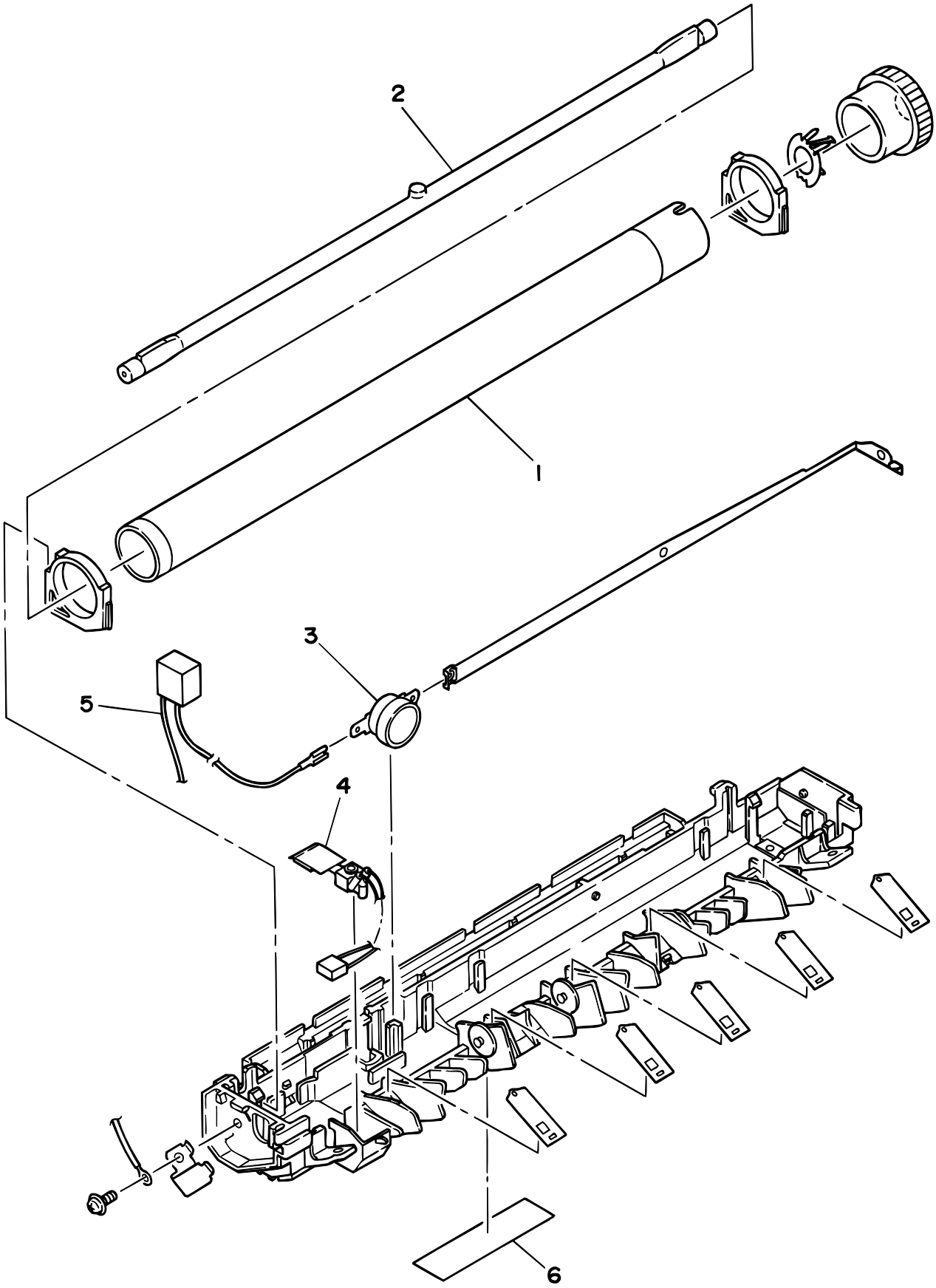
| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40593201 | Frame Unit Assy | 1 | |
| | | | | | |
| | 3 | 3PP4083-1191P1 | Paper Sensor E | 2 | |
| | 4 | 40721301 | Separator Assy | 1 | |
| | | | | | |
| | 6 | 40781701 | Compression Spring S | 1 | |
| | 7 | 3PA4083-1193G1 | Toner Sensor Assy. | 1 | |
| | 8 | 40496401 | Moter-Pulse | 1 | |
| | 9 | | Ep Unit | 1 | Consumable *1 |
| | 10 | | Toner Cartridge Unit | 1 | Consumable *1 |
| | 11 | 40779601 | Hopping Roller | 1 | |
| | 12 | 3PP4083-1128P1 | Roller Holder (Hopping Roller) | 1 | |
| | 13 | 3PB4083-1127P1 | Magnet H (Hopping Shaft) | 1 | |
| | 14 | 3PA4083-1133G1 | Hopping Shaft Assy. | 1 | |
| | 15 | NK2-10-SUS | Knock Pin | 1 | |
| | 16 | 4PP4083-1143P1 | Idle Gear R | 1 | |
| | 17 | 3PP4083-1184P1 | Idle Gear 2R | 1 | |
| | 18 | 3PP4083-1142P1 | Gear R | 1 | |
| | 19 | 2PP4083-1181P1 | Idle Gear M | 1 | |
| | 20 | 3PP4083-1189P1 | Earth Plate A | 1 | |
| | 21 | 3PP4083-1188P1 | Plate Side M | 1 | |
| | 22 | 3PP4083-1182P1 | Idle Gear P | 2 | |
| | 23 | 40721001 | Idle Gear 3R | 1 | |
| | 24 | 4PP4083-1165P1 | Tension Plate | 1 | |
| | 25 | 3PP4083-1185P1 | Idle Gear Heat | 1 | |
| | 26 | 4PP4083-1186P1 | Idle Gear E (A) | 1 | |
| | 27 | 3PP4083-1187P1 | Idle Gear E (B) | 1 | |
| | 28 | 3PP4083-1170P1 | Drive Shaft E (Eject) | 1 | |
| | 29 | 40074601 | Eject Roller | 2 | |
| | 30 | 3PP4083-1141P1 | Resistration Bearing | 5 | |

*1 = Only for OKIOFFICE84/OKIFAX4500

## Section 11 PRINTER BASE FRAME UNIT 2/2

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 31 | 3PB4083-1140P1 | Resistration Roller | 1 | |
| | 32 | 4PP4083-1139P001 | Film Guide | 1 | |
| | 33 | 40737801 | Gear T | 1 | |
| | 34 | 40713601 | Transfer Roller | 1 | |
| | 35 | 4PP4083-1136P1 | Spring pressure (L) | 1 | |
| | 36 | 3PP4083-1161P1 | Bearing BU (Back Up Roller) | 2 | |
| | 37 | 40594601 | Pressure Roller B (Back Up Roller) | 1 | |
| | 38 | 3PP4083-1233P1 | Paper Guide (R) | 1 | |
| | 39 | 3PP4083-1232P1 | Paper Guide (L) | 1 | |
| | 40 | 1PP4083-1231P1 | Paper Holder | 1 | |
| | 41 | 3PP4083-1192P1 | Paper Sensor Exit | 1 | |
| | 42 | 4PP4083-1247P1 | Hopping Spring | 1 | |
| | 43 | 40638001 | Contact-CB | | |
| | 44 | 40638102 | Conn, Cord-HV | | |
| | 45 | | Screw | | |
| | 46 | 40625401 | Fan | 1 | |
| | 47 | 4PP4083-1137P1 | Spring Pressure (R) | 1 | |
| | | | | | |
| | 49 | 40562401 | Sheet Guide | 1 | |
| | | | | | |
| | 51a | 40592801 | Heat Assy. | 1 | 120V |
| | 51b | 40592802 | Heat Assy. | 1 | 230V |
| | 52 | 40034001 | Stopper Spring | 1 | |
| | 53 | 4PB4091-6047P1 | Caution Label (TR) | 1 | 230V |
| | 54 | 40688601 | Washer-TR | 1 | |
| | 55 | 40710301 | Guide-Gear T | 1 | |
| | 56 | 40634701 | Bearing-Gear | 1 | |
| | | | | | |
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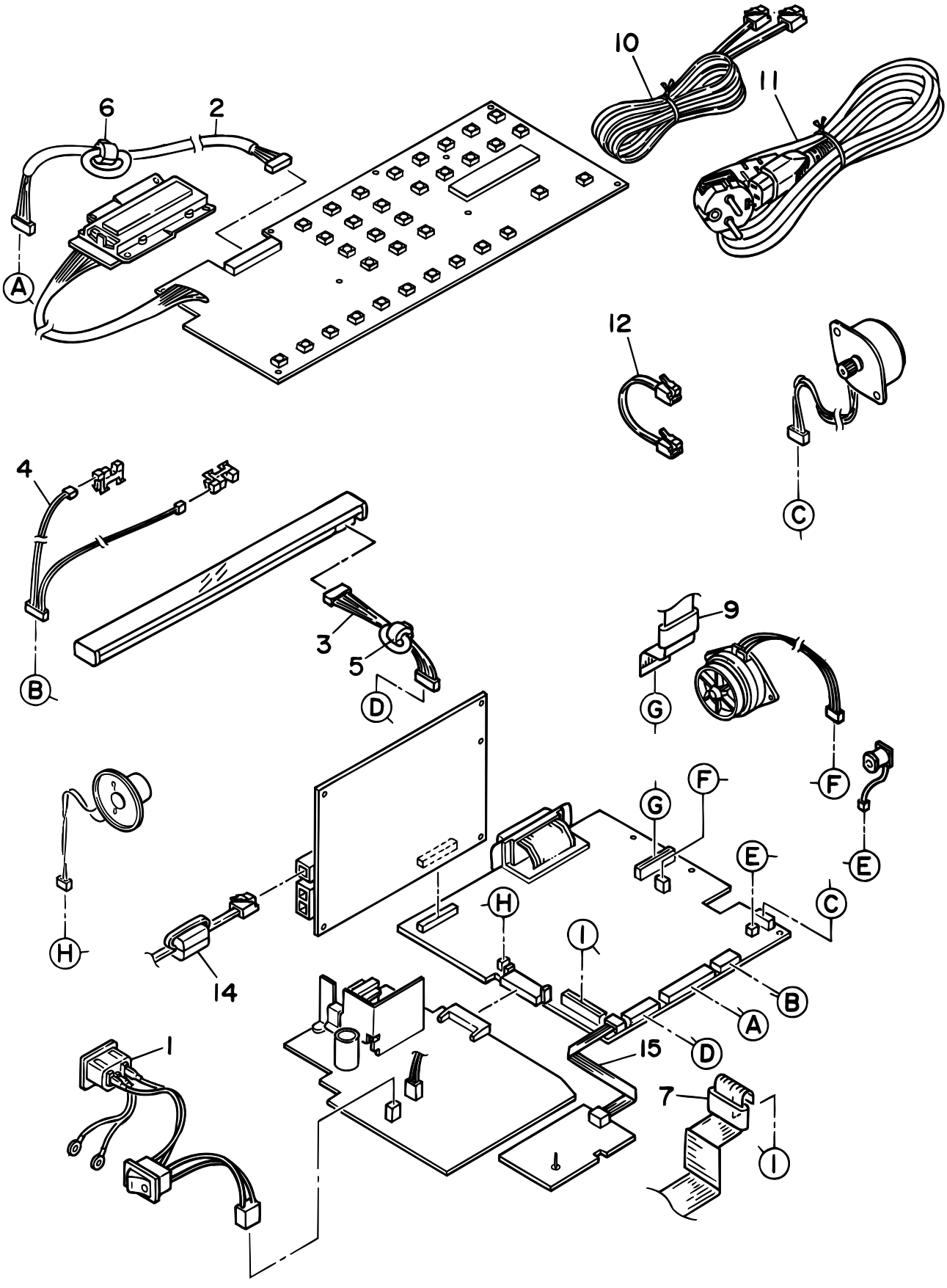
## SECTION 12 PRINTER HEAT ASSY



## Section 12 PRINTER HEAT ASSY.

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 3PB4083-1202P1 | Heat Roller | 1 | |
| | 2a | 40649301 | Halogen Lamp | 1 | 120V |
| | 2b | 40649302 | Halogen Lamp | 1 | 230V |
| | 3 | 4PB4083-1204P1 | Thermostat | 1 | |
| | 4 | 4PB4083-1205P1 | Thermistor | 1 | |
| | 5 | 4PB4083-1213P1 | Heat Cord | 1 | |
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## SECTION 13 CABLES



## Section 13 CABLES

| Rev. | No. | Oki parts Number | Description | Q'ty | Remarks |
|---|---|---|---|---|---|
| | 1 | 40635401 | Connection Cord-Wire (AC) | 1 | |
| | 2 | 40040001 | Connection Cord-Wire (OPE) | 1 | |
| | 3 | 40040201 | Connection Cord-Wire (CIS) | 1 | |
| | 4 | 40040301 | Connection Cord-Wire (PC1/2) | 1 | |
| | 5 | 105A1070C0003 | TFC-20-10-10 Core | 1 | CIS-R51 |
| | 6 | 105A1070C0004 | TFC-23-11-14 Core | 1 | CPE-R51 |
| | 7 | 105A1073C4002 | SSC-40-12-M Core | 1 | HV-R51 |
| | 8 | | | | |
| | 9 | 1051003C0001 | FPC-25-20 Core | 1 | LED-R51 |
| | 10 | | TEL/LINE Cable | 1 | Note-1 |
| | 11 | | AC CORD | 1 | Note-2 |
| | 12 | 4YS4111-5581P001 | CORD (TEL1-TEL 2) | 1 | GER, Bosch only |
| | | | | | |
| | 14 | 105A1068C1004 | SFC-8 Core | 1 | For TEL/LINE Cord use |
| | 15 | 40687701 | Cord-Flat (SUMI CARD) | 1 | P6L-R51 |
| | | | | | |
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Note 1: Parts will be supplied by OUK per country.

Note 2: Parts will be supplied by OUK per country except ODA version.

# Appendix E

# Boards Layout

# (OKIOFFICE84, OKIFAX 4500)

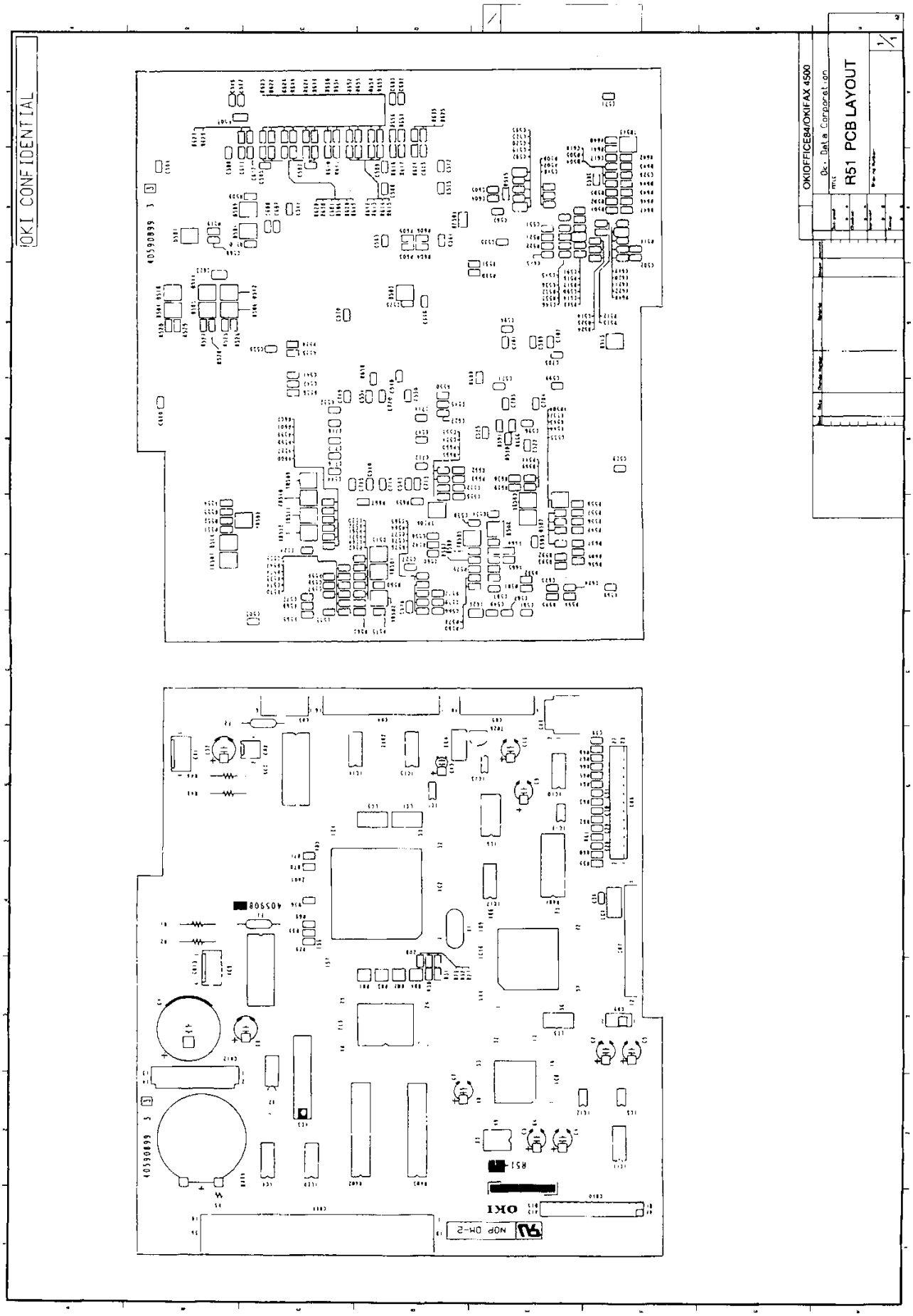
## Second Edition

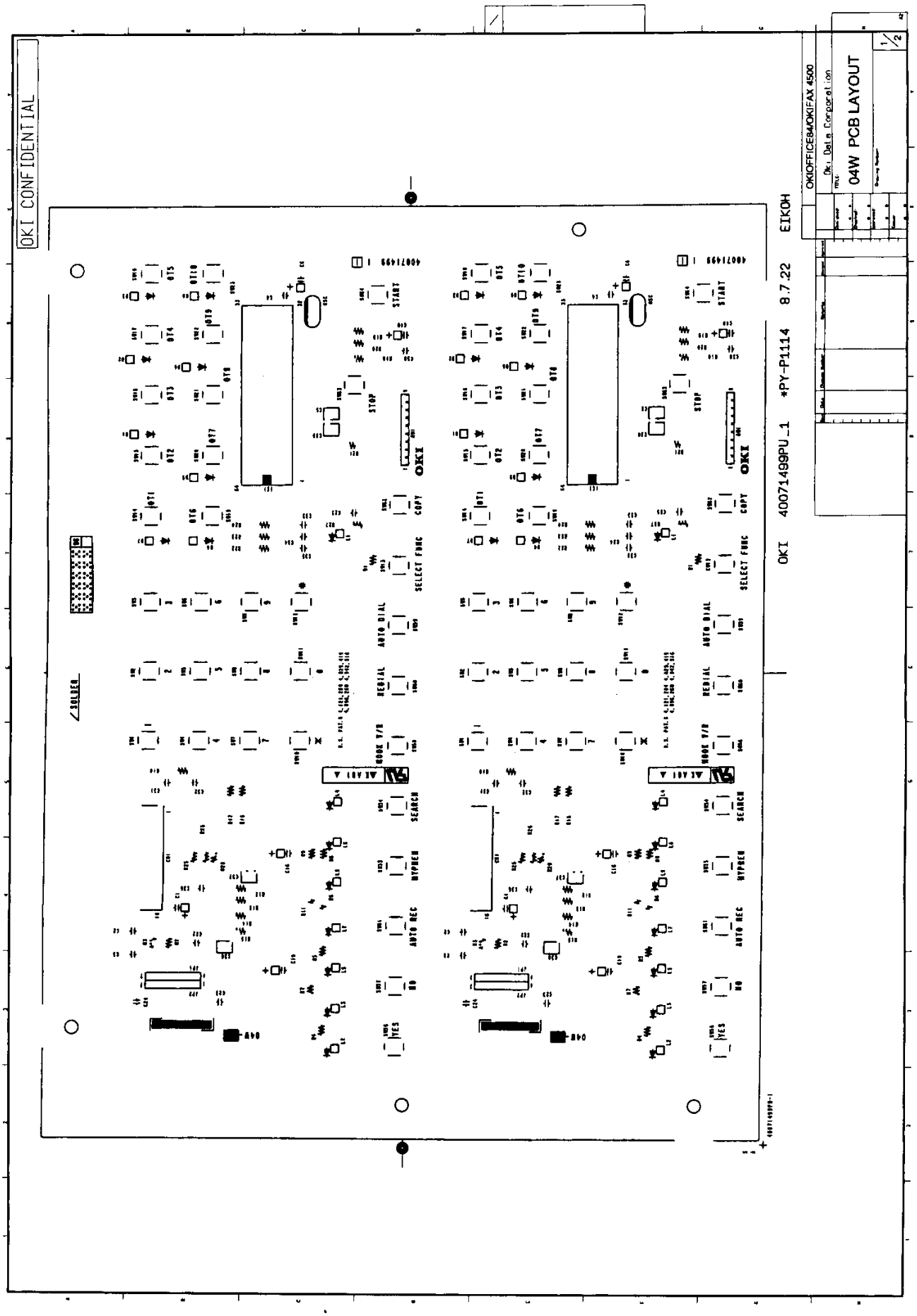
## December, 1998

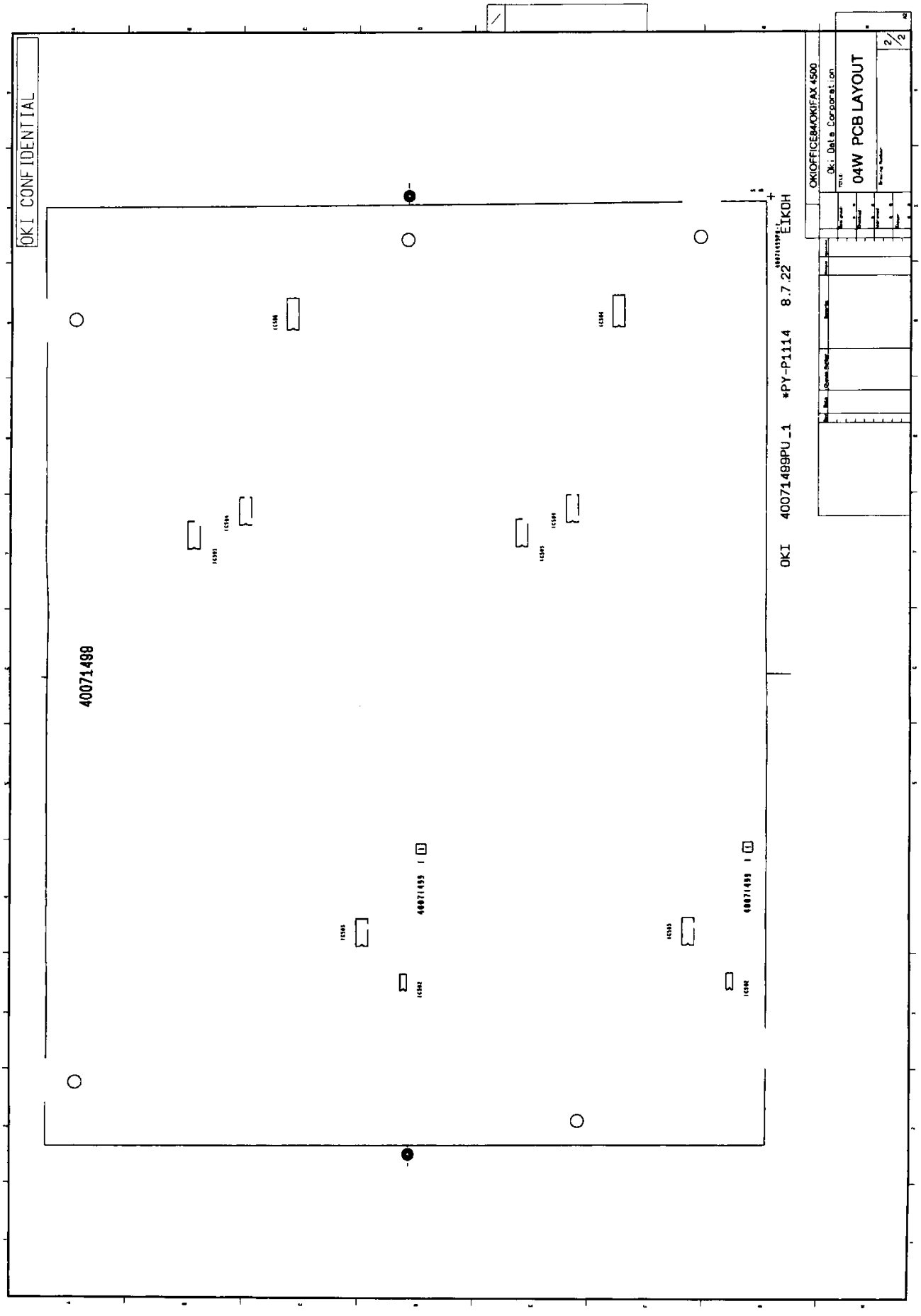
## Oki Data Corporation

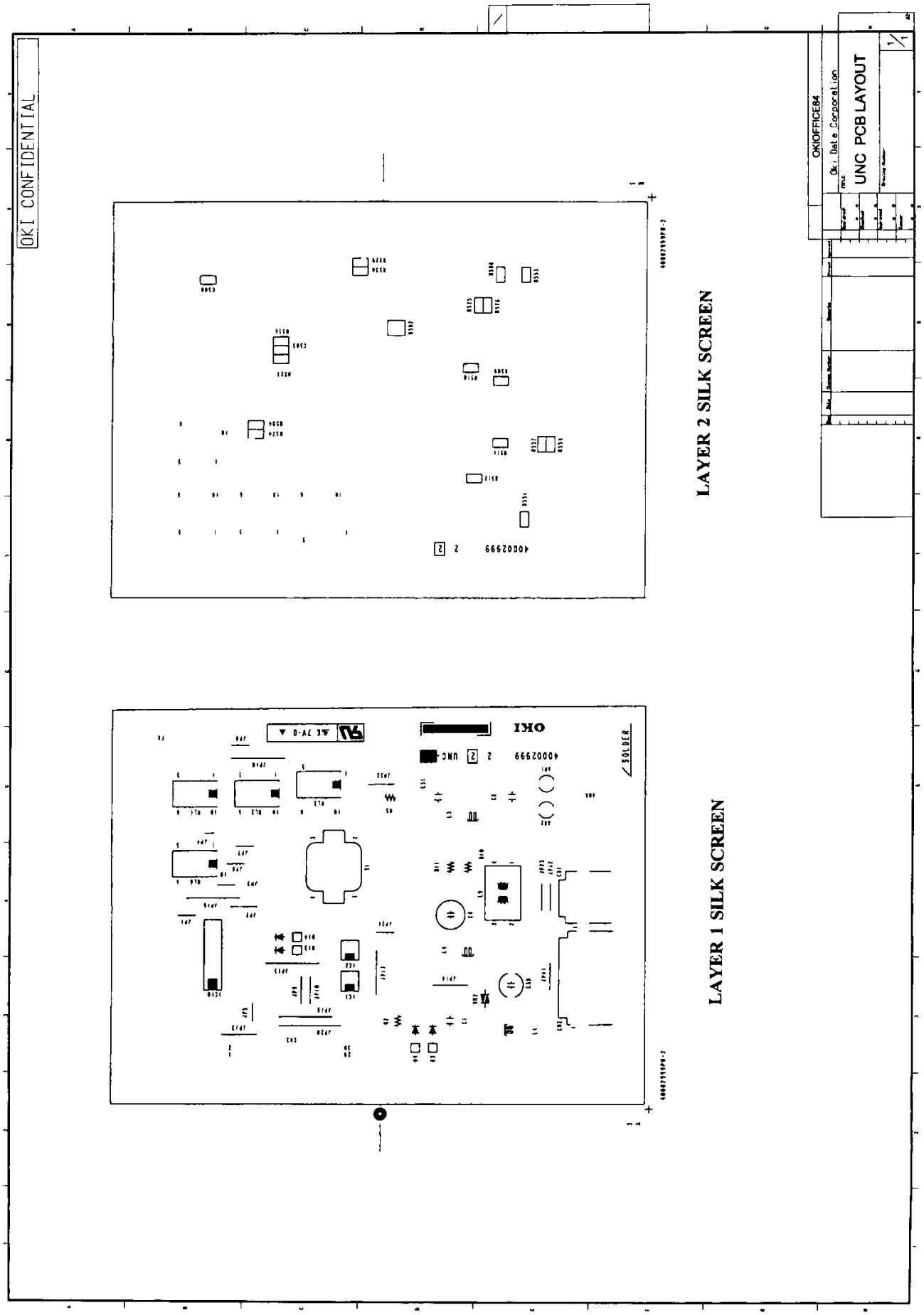
## CONTENTS

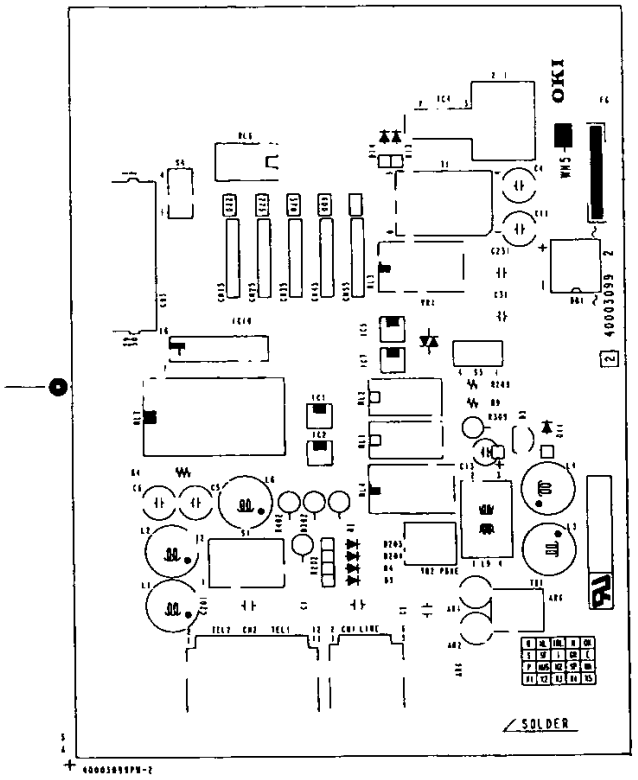

| No. | ITEMS | OKIOFFICE84 | OKIFAX 4500 |
|---|---|---|---|
| 1 | R51 Package Layout | ○ | ○ |
| 2 | 04W (Ope) Package Layout | ○ | ○ |
| 3 | UNC Package Layout | ○ | |
| 4 | WN5 Package Layout | | ○ |
| 5 | DN5 Package Layout | | ○ |
| 6 | FN5 Package Layout | | ○ |
| 7 | POW (120V) Package Layout | ○ | |
| 8 | POW (120V) Package Layout | | ○ |
| 9 | P2H (HV) Package Layout | ○ | ○ |
| 10 | P6L (SubH) Package Layout | ○ | ○ |


OKI CONFIDENTIAL
OKIOFFICE84/OKIFAX 4500
Oki Data Corporation
R51 PCB LAYOUT
OKI

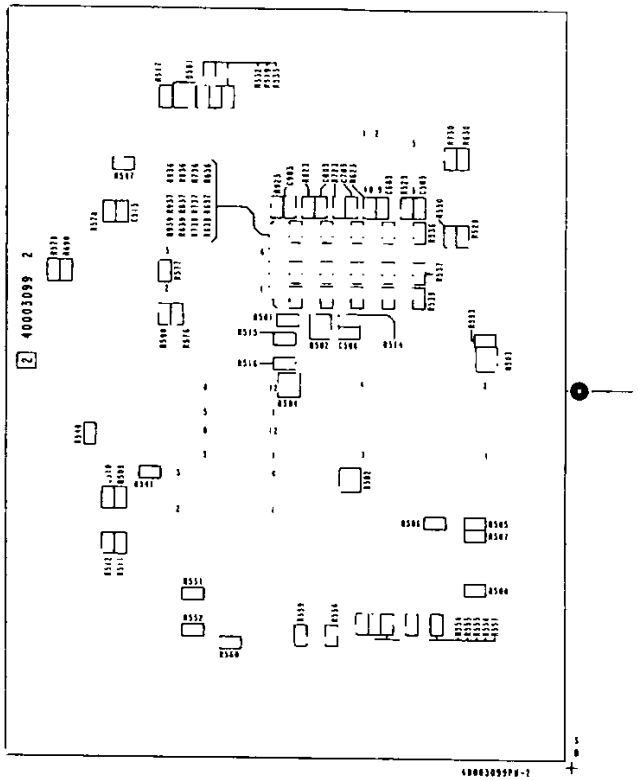

OKI CONFIDENTIAL
OKIOFFICE84/OKIFAX 4500
Oki Data Corporation
04W PCB LAYOUT
1/2
EIKOH
8.7.22
*PY-P1114
40071499PU_1
OKI
SOLDER
START
STOP
COPY
SELECT FUNC
AUTO DIAL
REDIAL
HOOK T/R
SEARCH
HYPHEN
AUTO REC
NO
YES


OKI CONFIDENTIAL
40071498
OKI 40071499PU_1 *PY-P1114 8.7.22 EIKOH
OKIOFFICE84OKIFAX 4500
Oki Data Corporation
04W PCB LAYOUT
2/2


OKI CONFIDENTIAL
OKIOFFICE84
Oki Data Corporation
UNC PCB LAYOUT
LAYER 2 SILK SCREEN
LAYER 1 SILK SCREEN
OKI
SOLDER




LAYER 1 SILK SCREEN




LAYER 2 SILK SCREEN

OKIFAX 4500

Oki Data Corporation

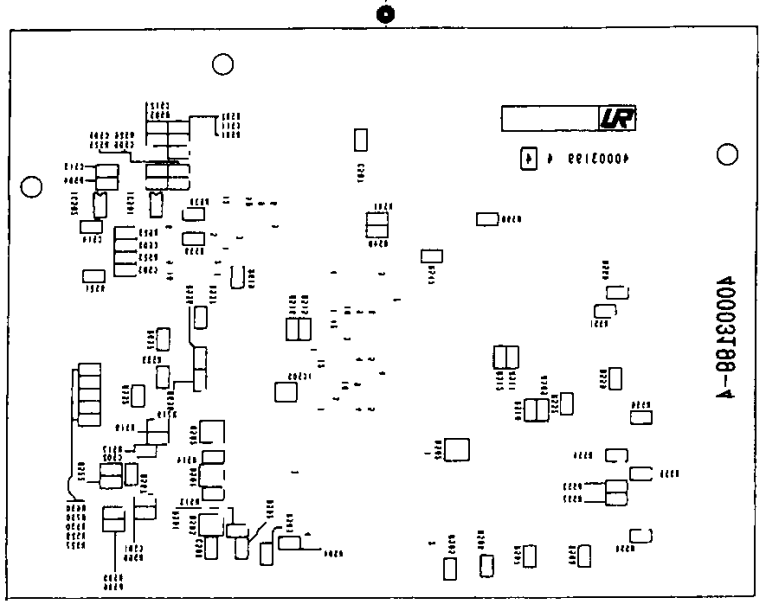
WN5 PCB LAYOUT

OKI CONFIDENTIAL

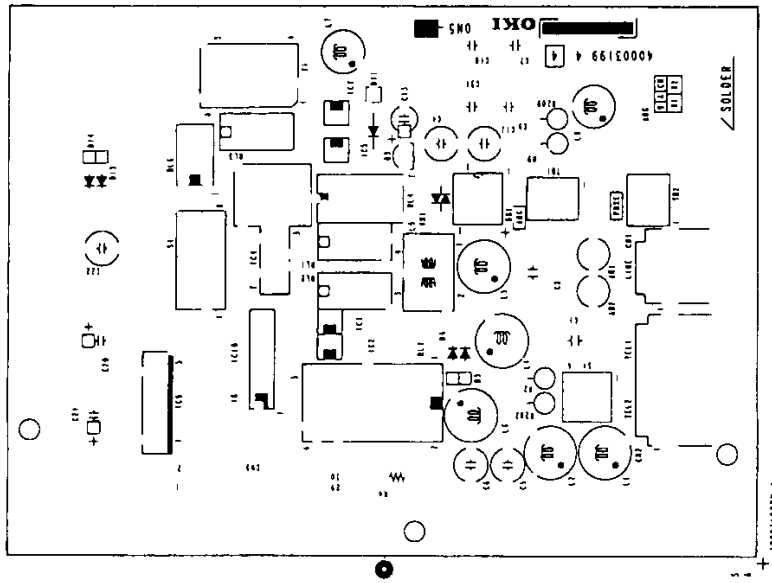
OKIFAX 4500

Oki Data Corporation

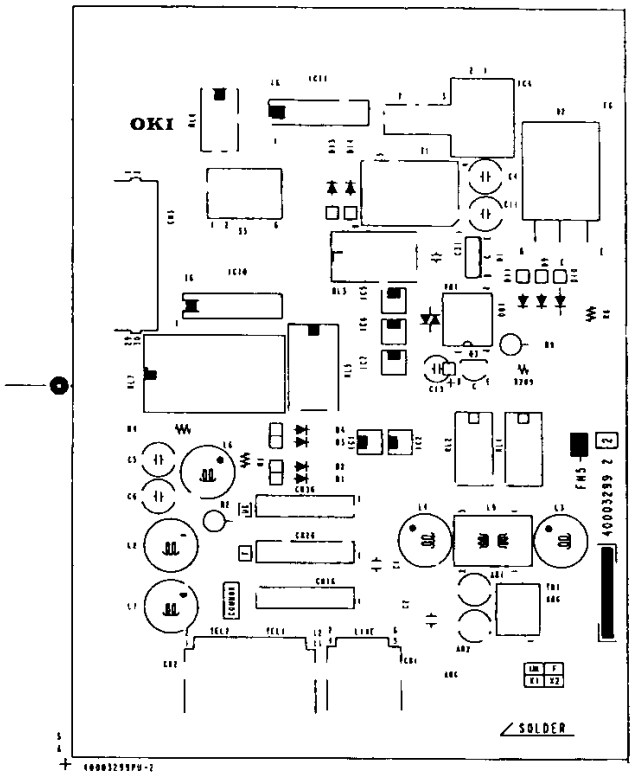
DN5 PCB LAYOUT



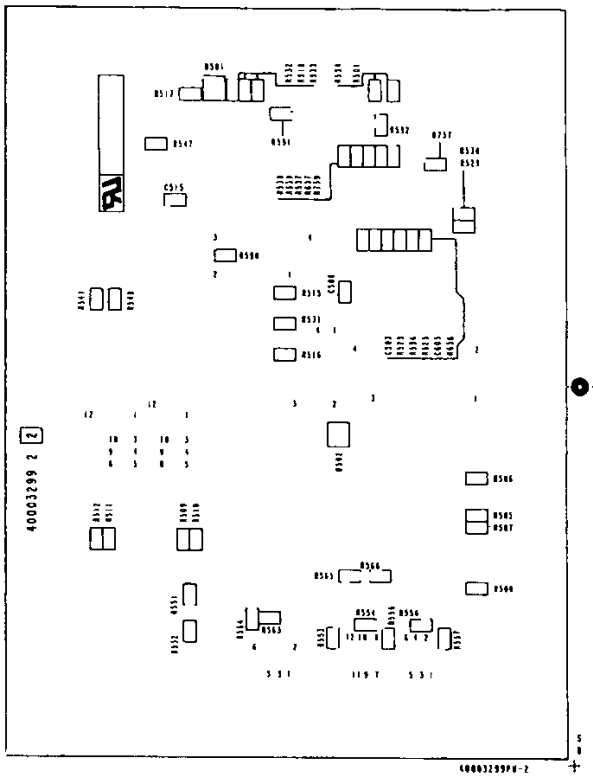
LAYER 2 SILK SCREEN



LAYER 1 SILK SCREEN



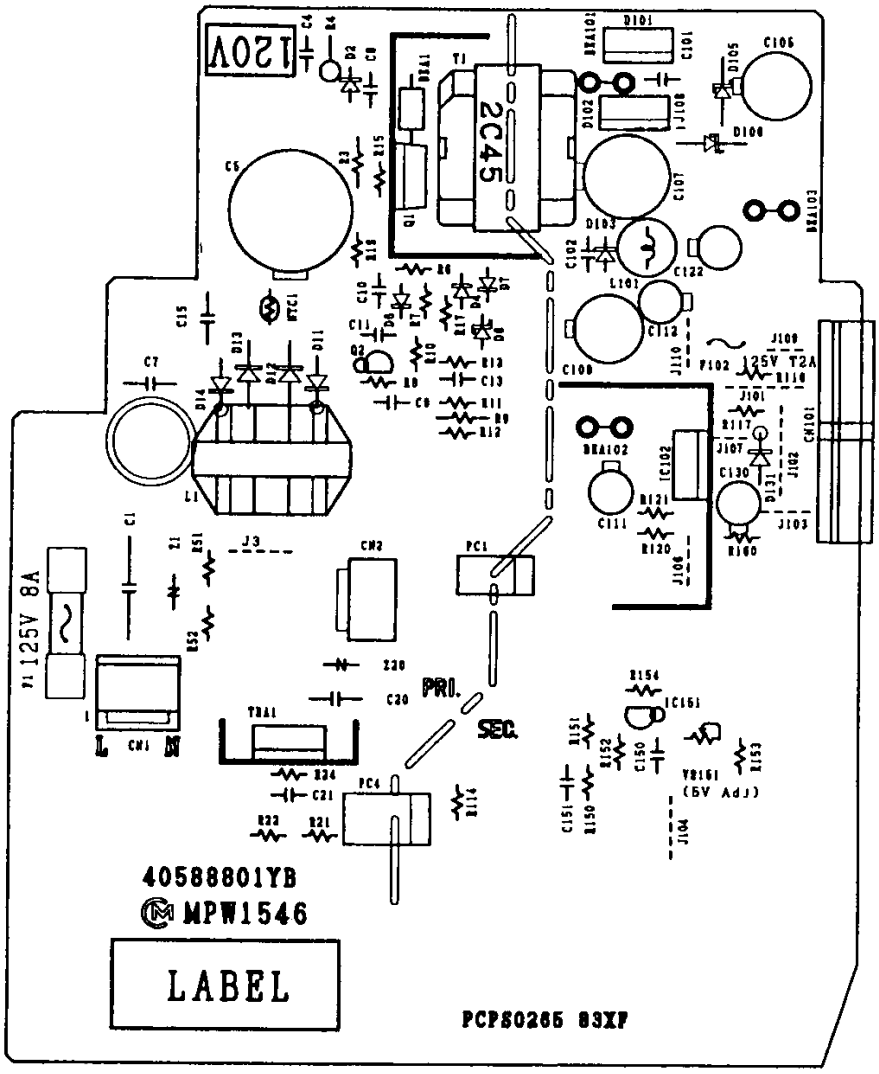

LAYER 1 SILK SCREEN




LAYER 2 SILK SCREEN

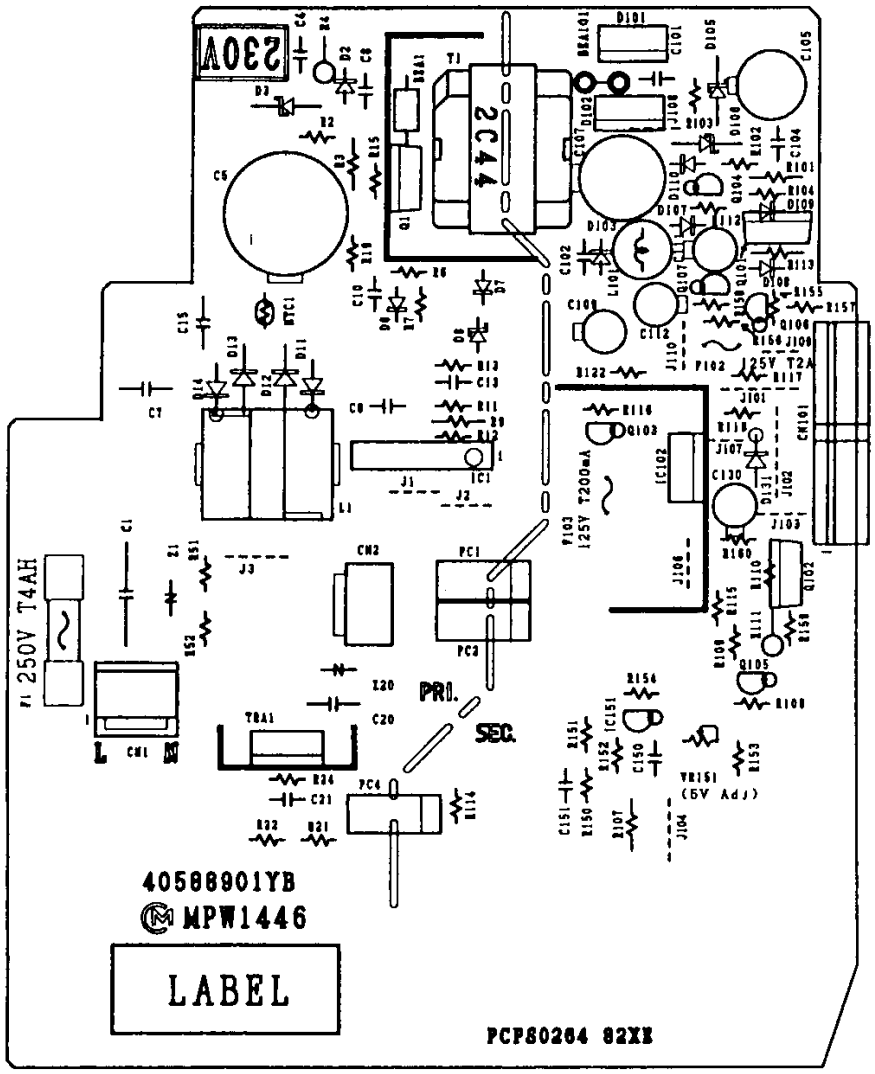
OKIFAX 4500
Oki Data Corporation
FN5 PCB LAYOUT

OKI CONFIDENTIAL

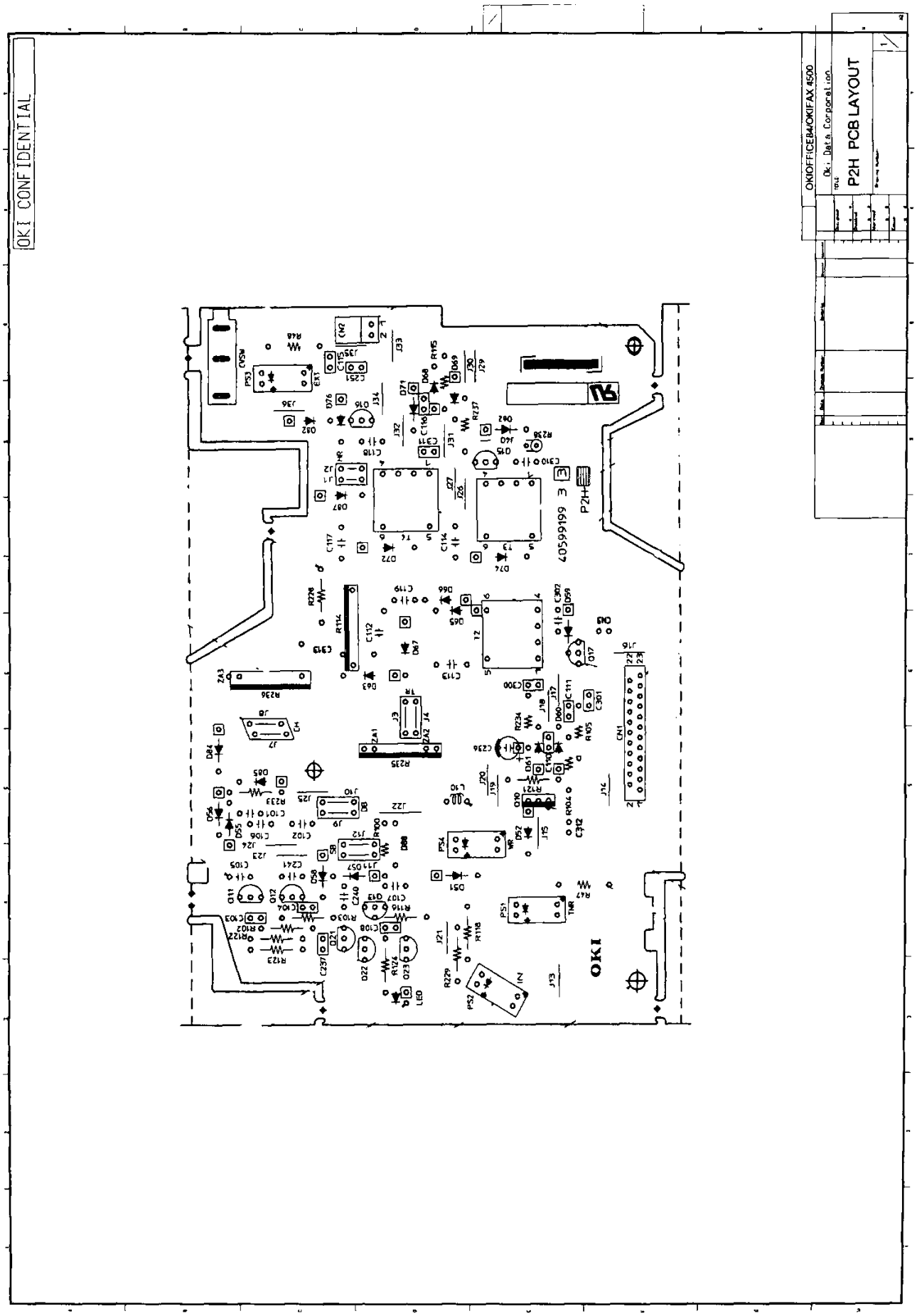


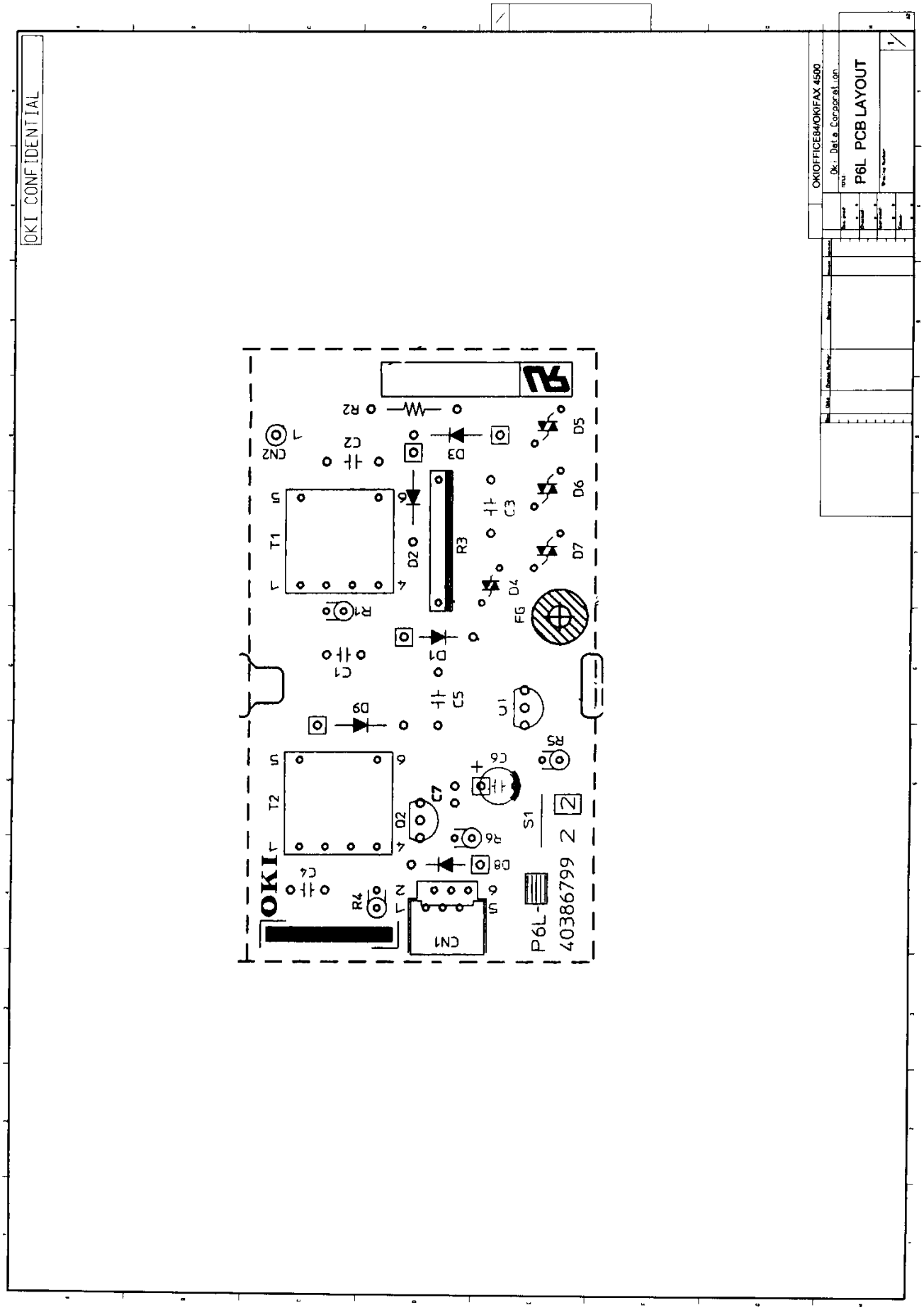

| | | | | | |
|---|---|---|---|---|---|
| | | | | | OKIOFFICE84 |
| | | | | | Oki Data Corporation |
| | | | | | MPW1546 PCB LAYOUT (120V) |
| | | | | | 1/1 |

OKI CONFIDENTIAL




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | OKIFAX 4500 | |
| | Date | Change Number | Remarks | Drawn | Approved | Oki Data Corporation | |
| | | | | | Designed | TITLE: MPW1446 PCB LAYOUT (230V) | |
| | | | | | Checked | | |
| | | | | | Approved | Drawing Number: | 1/1 |
| | | | | | Issue | | |


OKI CONFIDENTIAL
OKIOFFICE84/OKIFAX 4500
Oki Data Corporation
P2H PCB LAYOUT
P2H
40599199 3
OKI


OKI CONFIDENTIAL
OKIOFFICE84/OKIFAX 4500
Oki Data Corporation
P6L PCB LAYOUT
OKI
P6L-
40386799 2
CN1
CN2
R1
R2
R3
R4
R5
R6
C1
C2
C3
C4
C5
C6
C7
D1
D2
D3
D4
D5
D6
D7
D8
D9
T1
T2
U1
S1
FG

## Appendix F

# PC-Loading

## Second Edition

## December, 1998

## Oki Data Corporation

Oki Data Confidential

# FX-051

# SYSTEM SPECIFICATION

## PC LOADING PART

## Ver. 00.11

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1.2 General ..... F-1
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1.4 Related Document ..... F-1

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# 1. General

## 1.1 Application

This specification applies to the OKIOFFICE84/OKIFAX4500, an MFP unit capable of two-way communication using the parallel port as its standard feature.

## 1.2 General

This specification describes the details of PC loading through the Centro connector provided in the OKIOFFICE84/OKIFAX4500.
The functions covered are for loading by each of default data, flash memory program and language areas, which are equivalent to those of the existing HSLS.
You should download the fill from DOS prompt ; not DOS-window.

## 1.3 Note on Explanation

The terms used herein shall be interpreted as follows unless specified otherwise.

| Term | Explanation |
|---|---|
| Transfer | Transmission from the PC to the MFP |
| Receiving | Receiving from the PC to the MFP |
| Loading data | Data in general that is transferred from the PC to the MFP |
| Loading program | Program for receiving the data actually loaded to the MFP |

## 1.4 Related Document

FX-051 Product Specification
FX-051 Product Specification

# 2. Basic Operation

## 2.1 Supported Functions

The PC loading functions described herein are as follows. Functions equivalent to those used in the existing HSLS (High Speed Loading System) are supported.

1. Default data area loading function
2. Language area loading function
3. Flash memory area program loading function

These PC loading functions are supported only when the OS used on the PC side is either MS-DOS Ver. 6.0 or above or PC-DOS Ver. 6.0 or above.

## 2.2 Differences from HSLS

It must be noted that PC loading through the Centro cable is different in the following points as compared with loading in the HSLS:

(1) While transition to the PC loading process is judged according to the presence/absence of the HSLS board, transition to PC loading is possible by detection of memory error occurrence and manual key operation this time.

(2) The header information is added anew to cope with the addition of the loading program as one of the loading data.

(3) There is no special application in this PC loading unlike the HSLS. Loading is performed by loading data output to the parallel port by means of a binary specification (copy/b).

(4) In the case of the HSLS, returning to normal standby state will not occur so long as the HSLS board is installed. In this system, on the other hand, the normal standby state is set automatically upon detection of the end of loading data by means of the header data.

(5) The cause of the error is displayed by the corresponding code upon occurrence of a hash NG or other error. For the code, see “6. List of Error Causes and Corresponding Codes.”

# 3. PC Loading Procedure

## 3.1 PC Loading upon Memory Error Occurrence

### 3.1.1 Explanation on Procedure

The PC loading procedure when the LCD on the MFP displays “MEMORY ERROR” for a hash NG state due to one reason or another is explained below.

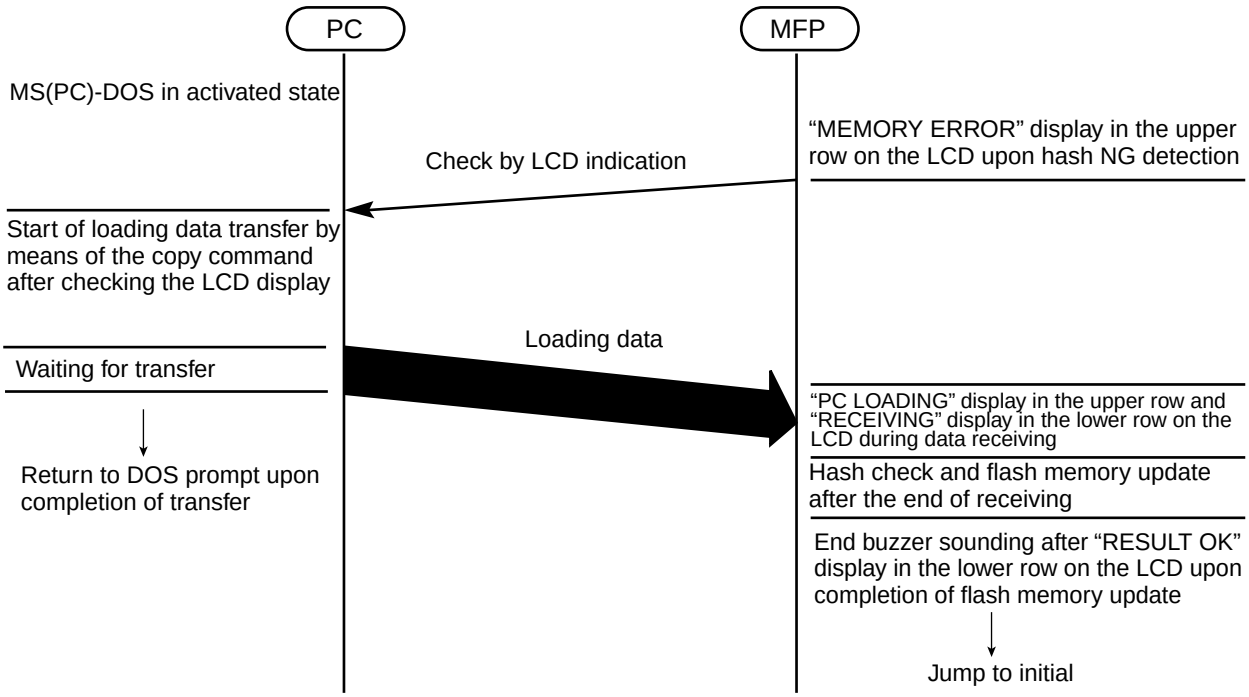
(1) Activate the MS(PC)-DOS with the host PC and the MFP connected via the Centro cable.

(2) Input the copy command from the MS(PC)-DOS on the PC to output the loading data file in binary specification to the LPT1 in order to transfer the loading data to the MFP.

Example:
`>copy/b xxx.x LPT1` (xxx.x is the loading data file name.)

(3) The user shall judge the normal end of data loading by checking the normal end of file output on the PC and sounding of the buzzer indicating the normal end on the MFP. If the MFP displays an error on the LCD, sounds the buzzer for an error or lights up the alarm LED, the user shall judge abnormal end of data loading from the PC and repeat the procedure from step 2 after turning the MFP power off once and to on again.

### 3.1.2 Procedural Sequence Diagram


PC
MFP
MS(PC)-DOS in activated state
“MEMORY ERROR” display in the upper row on the LCD upon hash NG detection
Check by LCD indication
Start of loading data transfer by means of the copy command after checking the LCD display
Loading data
Waiting for transfer
“PC LOADING” display in the upper row and “RECEIVING” display in the lower row on the LCD during data receiving
Return to DOS prompt upon completion of transfer
Hash check and flash memory update after the end of receiving
End buzzer sounding after “RESULT OK” display in the lower row on the LCD upon completion of flash memory update
Jump to initial

### 3.2 PC Loading by Manual Operation

3.2.1 Explanation on Procedure

Loading shall be performed as shown below when the PC loading function is selected by key operation by a service man.

(1) Activate the MS(PC)-DOS with the host PC and the MFP connected via the Centro cable.

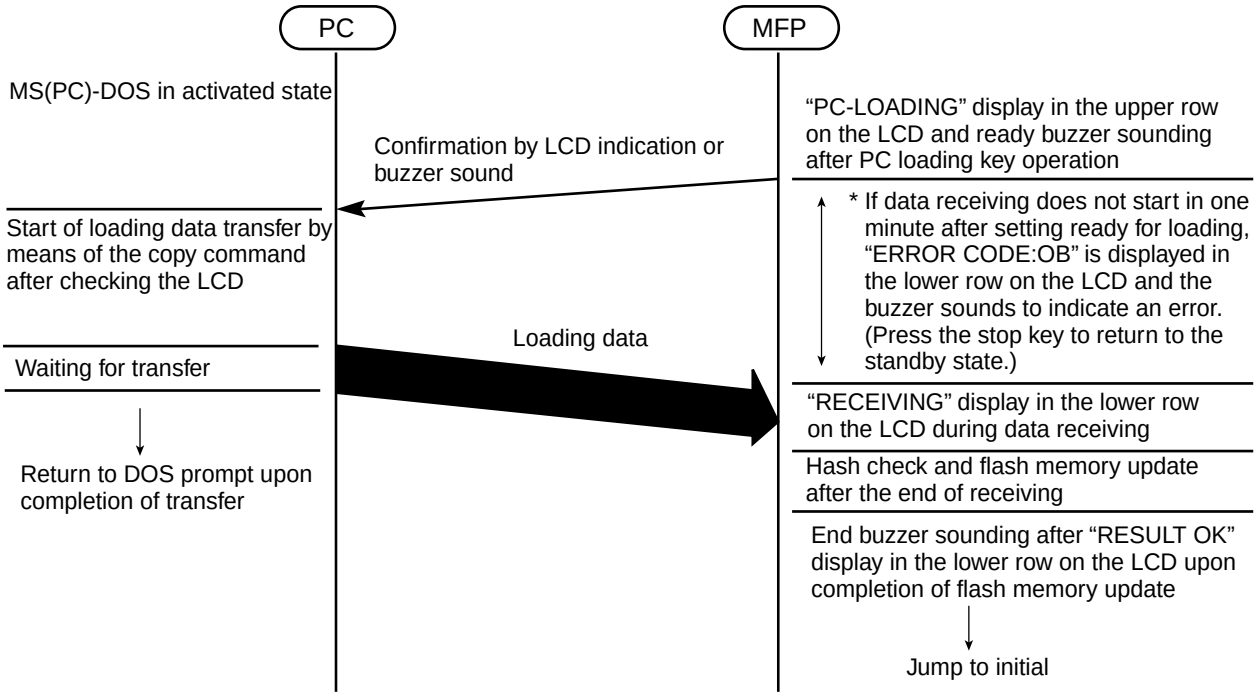
(2) Input the copy command from the MS(PC)-DOS on the PC to output the loading data file in binary specification to the LPT1 in order to transfer the loading data to the MFP.

Example:

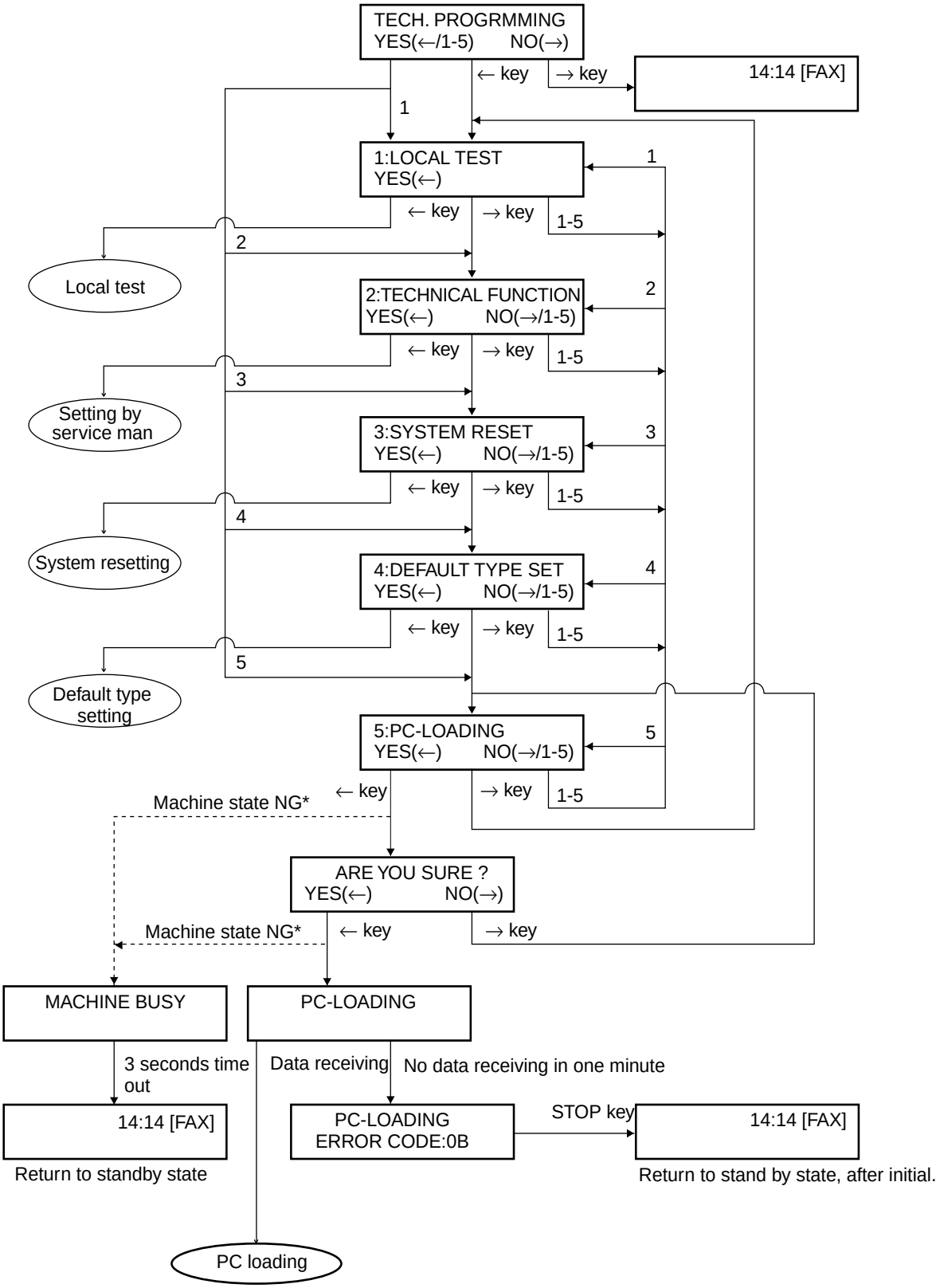
```
>copy/b xxx.x LPT1        (xxx.x is the loading data file name.)
```

(3) The user shall judge the normal end of data loading by checking the normal end of file output on the PC and sounding of the buzzer indicating the normal end on the MFP. If the MFP displays an error on the LCD, sounds the buzzer for an error or lights up the alarm LED, the user shall judge abnormal end of data loading from the PC and repeat the procedure from step 2 after turning the MFP power off once and to on again. (See “6. List of Error Causes and Corresponding Codes” for the error cause.)

3.2.2 Procedural Sequence Diagram


PC
MFP
MS(PC)-DOS in activated state
“PC-LOADING” display in the upper row on the LCD and ready buzzer sounding after PC loading key operation
Confirmation by LCD indication or buzzer sound
* If data receiving does not start in one minute after setting ready for loading, “ERROR CODE:OB” is displayed in the lower row on the LCD and the buzzer sounds to indicate an error. (Press the stop key to return to the standby state.)
Start of loading data transfer by means of the copy command after checking the LCD
Loading data
Waiting for transfer
“RECEIVING” display in the lower row on the LCD during data receiving
Hash check and flash memory update after the end of receiving
End buzzer sounding after “RESULT OK” display in the lower row on the LCD upon completion of flash memory update
Return to DOS prompt upon completion of transfer
Jump to initial

3.2.3 Operation Flow




* image in memory, redial, delayed fax, alarm (except NO PAPER (*1), TONER LOW/NO IDunit), and OFF HOOK, operate different way, dotted lines.
(*1) : except NO PAPER or PAPER FEED ERROR (RJAM1)

## 4. LCD Messages

The LCD message in each operation state is shows below. Note that each message does not vary with the default type or language type.

(1) Upon transition to PC loading function

Transition by manual operation

```
PC-LOADING
```

Transition by a memory error

```
MEMORY ERROR
```

(2) During data receiving before loading end buzzer sounding

```
PC-LOADING
RECEIVING
```

(3) During loading end buzzer sounding

```
PC-LOADING
RESULT OK
```

(4) Upon error occurrence during loading

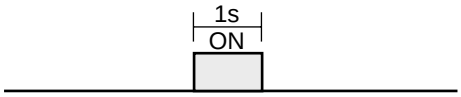
```
  PC-LOADING
ERROR   CODE:**
```

"**": Error code (See "6. List of Error causes and Corresponding Codes.")

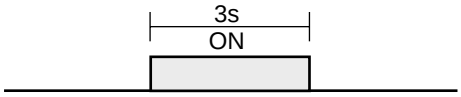
## 5. Buzzer Sounding Patterns

The buzzer sounding patterns for various cases are shown below. In each case, the buzzer frequency is 2,400 Hz and the sound volume is maximum.

### 5.1 Upon Start of PC Loading



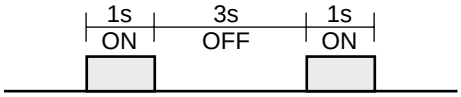

### 5.2 Upon Normal End



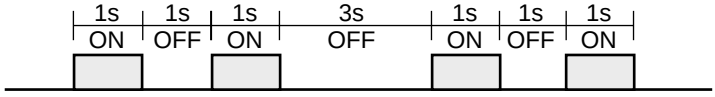

### 5.3 Upon Error Occurrence

The following sounding patterns are provided for indicating various error causes. Intermittent sounding is repeated until the MFP power is turned off. See “6. List of Error Causes and Corresponding Codes” for details of the error causes and codes.

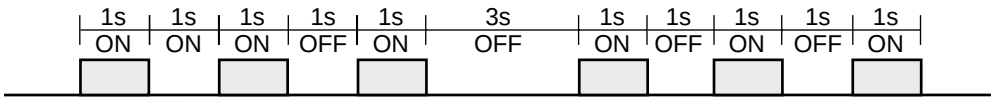
(1) Receive data hash check NG (error code: “01”)



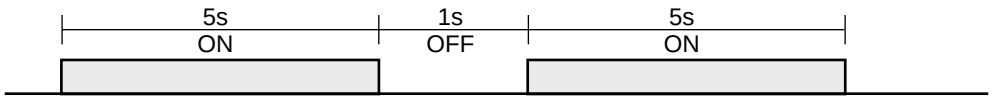

(2) Flash memory erase/write NG (error code: “02”)




(3) Disagreement between contents of flash memory and external RAM (error code: “03”)




(4) Other error (error code: other other than above)



## 6. List of Error Causes and Corresponding Codes

The table below lists the error causes likely to occur during PC loading and the corresponding codes. When an error occurs, the corresponding error code is displayed, the buzzer sounds in the corresponding pattern and transition to the permanent loop state occurs. (See Note 1.)

See “4. LCD Messages” and “5. Buzzer Sounding Patterns” for the LCD display and buzzer sound upon occurrence of each error.

| No. | Error cause | CODE |
|---|---|---|
| 1 | Timeout of data receiving waiting timer (14 seconds) | 00 |
| 2 | Loading data hash check error | 01 |
| 3 | Flash memory erase/write error | 02 |
| 4 | Disagreement between flash memory and external RAM contents (verify error) | 03 |
| 5 | Header sum check NG *1 | 04 |
| 6 | Disagreement between loading machine type and machine identifier in header *1 | 05 |
| 7 | Designation of unspecified parameter in header *1 | 06 |
| 8 | Extended address record sum check NG *2 | 07 |
| 9 | Data record sum check NG *2 | 08 |
| 10 | Start address record sum check NG *2 | 09 |
| 11 | File end record sum check NG *2 | 0A |
| 12 | Timeout by failure in normal data receiving for 1 minute in loading waiting state after operation | 0B |
| 13 | RAM check result NG upon starting loading program processing | 0C |

*1. Occurs only in binary format specification.
*2. Occurs only in Intel HEX code specification (reservation code not actually used).

(Note 1)
No error processing (transition to permanent loop state after error code display and buzzer sounding in corresponding pattern) occurs when any of the following errors occurs in receiving the loading program header. The receive data until error occurrence is discarded and the program header receiving starts from the beginning again.

(1) Header sum check NG
(2) Disagreement between loading machine type and machine identifier in header
(3) Designation of unspecified parameter in header
(4) Designation of other than loading program as data type identifier in header
(5) Designation of no succeeding data in descriptor
(6) Designation of Intel HEX format as data type
(7) 14 seconds timeout in header receiving end waiting state

## 7. Cautions

(1) Execute the copy command for PC loading after sounding of the buzzer indicating the ready state for loading (for about 1 second). Since the buzzer does not sound for PC loading upon memory error detection, however, execute the copy command after checking “MEMRY ERROR” indication on the LCD after power on.

(2) Even after returning to the DOS prompt state after the end of the copy command on the PC, do not turn the MFP power off until the buzzer indicating the end of MFP loading sounds.

## 8. Loading Processing Time

The processing time for reloading in the whole OKIOFFICE84/OKIFAX4500 area (program 1, language and default) is shown below.
Use the value only as reference since the transfer time varies with each type of PC.

Measuring conditions:

| | |
|---|---|
| MFP: | OKIOFFICE84/OKIFAX4500 |
| Flash memory: | MBM29F800T (non-cleared state) |
| Transfer file version: | STD1 |

Result:

| | |
|---|---|
| Time for transfer from PC to FAX main unit: | Approx. 45 seconds |
| Flash memory update time: | Approx. 25 seconds |

## Appendix G

# RMCS SYSTEM MANUAL
## (For Model 30)

## Second Edition

## December, 1998

## Oki Data Corporation

40672201TH Rev. 4

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1.1 Introduction ..... G-1
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2.1 Installation of RMCS Disc ..... G-3
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2.3 Installation of PROGRAM/DEFAULT/LANGUAGE Files ..... G-3
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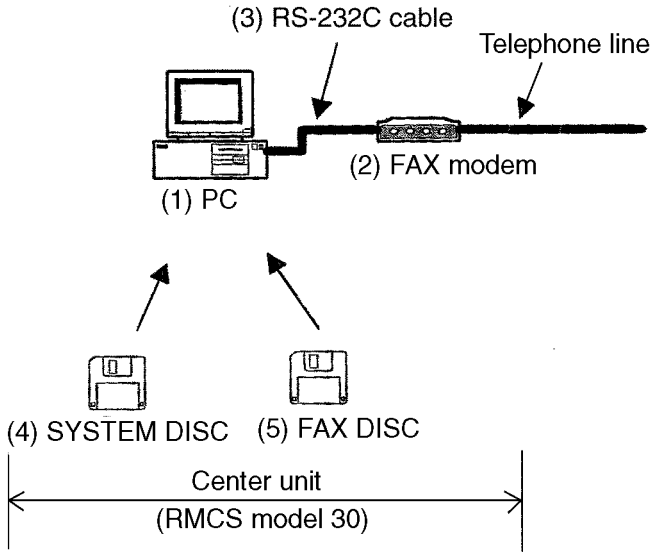
# 1. Notes to RMCS user

## 1.1 Introduction

RMCS stands for the Remote Management Center System.
RMCS refers to setting registration data and conducting maintenance operations from a remote location.
The purpose of this system is to speed up customer service and reduce maintenance costs. This system doesn't work on Windows. Don't activate it on Windows. This system work only on DOS.

## 1.2 System Composition of RMCS MODEL 30

System composition of RMCS Model 30 is shown as below.
PC, FAX MODEM and RS232C cable are necessary for RMCS MODEL 30. Please prepare them with the user.
At first, install a SYSTEM DISC and FAX DISC's in the PC to use RMCS.




(1) PC : IBM PC/AT compatible

(2) FAX modem : This is a equipment to call and communicate to the remote FAX machine. We recommend "Modem SURFR 56k (MOTOROLA)" for this system.

(3) RS232C cable : The straight type cable to connect serial port between PC and FAX modem.

(4) SYSTEM DISC : This disk is used to install this system and FAX DISC's to PC. SYSTEM DISC for Model 30 can be use for Model 10 and 20.

(5) FAX DISC : This software includes default data and communication control program etc. for the model of FAX machine. Therefore, this disc exists for the model of FAX machine one by one.

**Fig. 1.1 System composition of RMCS Model 30**

## 1.3 Required Devices

The following devices and software are required to operate this system.

<table>
<tr><td colspan="2">Personal computer</td><td>IBM PC/AT or compatible model</td></tr>
<tr><td rowspan="4"></td><td>Operating system</td><td>PC-DOS Ver. 3.1 or later</td></tr>
<tr><td>Internal memory</td><td>300KB or more</td></tr>
<tr><td>Extended memory</td><td>1MB or more</td></tr>
<tr><td>Fixed disk drive</td><td>20MB or more</td></tr>
<tr><td>Display</td><td>CGA/EGA/VGA type</td></tr>
<tr><td colspan="2">FAX modem</td><td>a) Class 1 of AT command.<br>b) High-speed (more 2400bps) frame transmission and receiving.<br>c) Able to use software flow control (XON/XOFF).<br>d) Set the FAX modem under the COM port setting as follows.<br><table><tr><th>COMx</th><th>SERIAL PORT START ADDR.</th><th>SERIAL PORT END ADDR.</th><th>IRQ</th></tr><tr><td>COM1</td><td>3F8</td><td>3FF</td><td>IRQ4</td></tr><tr><td>COM2</td><td>2F8</td><td>2FF</td><td>IRQ3</td></tr><tr><td>COM3</td><td>3E8</td><td>3EF</td><td>IRQ4</td></tr><tr><td>COM4</td><td>2E8</td><td>2EF</td><td>IRQ3</td></tr></table>e) Not need special driver to work<br><br>We recommend "Modem SURFR 56k (MOTOROLA)" for this system.</td></tr>
<tr><td colspan="2">RS-232C cable</td><td>Connection between Personal computer and FAX modem</td></tr>
</table>

**Note 1:** This system requires ANSI.SYS for screen control, and uses EMS memory. Confirm the following command in the CONFIG.SYS file. If not found the command, please add to write as follows.

```
DEVICE = C:¥DOS¥ANSI.SYS
DEVICE = C:¥DOS¥EMM386.EXE
```

## 1.4 Connectable Peripheral Equipment

| | |
|---|---|
| Printer | |
| Mouse | Microsoft mouse or equivalent |

To use a mouse, a mouse driver program is required.

## 2. Quick Set-up Manual for RMCS Model 30

This procedure should be used in conjunction with the main documentation supplied and is designed only as a brief set up and operation procedure.

The set-up for the RMCS is from a PC to an FAX modem. This FAX modem unit is the CONTROL or CENTER unit.
The receiving fax unit is connected to the control fax through the telephone line cables. This unit is called the REMOTE unit.

Note: The REMOTE unit must have Remote Diagnosis set to ON (user function 21).

CONFIG.SYS in CENTER PC must have the following added

DEVICE = C:¥DOS¥ANSI.SYS
DEVICE = C:¥DOS¥EMM386.EXE

Items 2-1, 2-2 and 2-3 need only be carried out for the initial installation.
And Item 3 is need only for operator to treat the .BIN files i.e. Program, Default and Language files.

### 2.1 Installation of RMCS Disc

Insert the "SYSTEM DISC" into drive A and set PC for drive A:

A>INST enter (then INSTALL MENU will be displayed.)

Select item 1 (RMCS SETTING) from the menu

| | | | |
|---|---|---|---|
| Hard disk drive= | [c] | | enter |
| Directory | = | [c:¥RMCS_ ] | enter |
| Password | = | [*******] | type in password and press enter |
| Dipswitch | | | enter (this is only for RMCS Model 10) |
| Are you sure | Y | | enter |

### 2.2 Installation of FAX Disc

Remove SYSTEM DISC from drive A and insert the "FAX DISC" (FX-048, FX-050VP or FX-175VP).
Select item 2 (FAX SETTING) from the menu, then the message is displayed as below.

| | |
|---|---|
| Fax Disk set | |
| Push any key | (After pushing any key, the message will be added as below). |
| FX-050VP | (for example) |
| Ver 02.00 | |
| Are you sure (Y or N) Y | enter (FAX DISC data will now be installed to the PC.) |

### 2.3 Installation of PROGRAM/DEFAULT/LANGUAGE files

With the FAX DISC in drive A run the Binary File Manager program:

A>BFM enter (Then Binary File Manager MENU will be displayed.)

Select [0]: STORE FILE

Remove FAX DISC from drive A and insert a disc containing the .BIN files. Use the arrows key to highlight the file to be stored and then press enter. Press ESC to return to the menu and then terminate.

## 2.4 Running RMCS

Return to drive C and to execute RMCS:

C>RMCS enter

The operator is then required to enter their ID and password. The ID is not critical to the operation and is only used for the operation history. The password must be the same as entered during Installation of RMCS set-up.

The TEL DIRECTORY MENU is now displayed and the main options are Select User and Register user.

**Note:** The user must be registered before being selected.

### 2.4.1 Registering user

Select 2 (Register user) from the menu and select NEW USER which is in inverse video. Press enter and the user has to supply the following details.

| | |
|---|---|
| <USER ID> | the name of the REMOTE fax |
| <TEL NUMBER> | the telephone number of the REMOTE fax |
| <FAX MODEL> | fax model of REMOTE fax (FX-048, FX-050VP, FX-175VP)<br>Press the space bar to select the model |
| <MEMO> | Not required, but a message can be entered |

Press function key F10 to register these details.

The FAX DATA FILE LIST is now displayed and the file name 'sys_defx.9xx' should be highlighted, press enter to complete registration (This file name is part of the FAX DISC information and 9xx is dependent on the model number).

### 2.4.2 Selecting a user

Select 1 (Select user) from the menu and USER LIST will be displayed. Use the arrow keys to select the required user then press enter.

The MAIN MENU will now be displayed:

1: Initialization of FAX
2: File [LOAD] (Center to FAX)
3: File [SAVE] (Center from FAX)
4: [EDIT] (ON LINE)
5: File [EDIT] (OFF LINE)
6: Testing
7: Environment setting
8: Terminate

At first it is necessary to select 'Modem settings' in 'Environment Setting' to set COMMUNICATION PORT connected between PC and FAX Modem, and to set FAX Modem parameters (TONE DIAL/ PULSE DIAL, DETECT BUSY TONE, DETECT DIAL TONE, SPEAKER MODE, SPEAKER VOLUME, FLOW CONTROL COMMAND).

Refer to the main documentation for more details on using this men, but summary of each items is as below:

1: Allow all the counters, function settings etc. to be cleared.
2: Download each date or the .BIN file from the PC to the REMOTE fax.
3: Upload the user, serviceman, tel number data from the REMOTE fax to the PC.
4: Edit the user, serviceman and tel number data in the REMOTE fax.

5: Edit the REMOTE fax data stored in the PC.
6: Read the s/w versions, activity report and counters data etc. from the REMOTE fax.
7: Select the COMM. PORT and provide and operation report of all transactions.
8: Terminate RMCS operation.

Follow all instructions in the submenus using the function keys and arrow keys as instructed to fully use the RMCS.

# Appendix H

# OKIOFFICE84/OKIFAX 4500
# Troubleshooting Manual

## Second Edition

## December, 1998

## Oki Data Corporation

40672201TH Rev. 4

# 1. General

This manual shall be used to identify the failure cause when a failure of the board is detected as a result of recovery through board replacement, etc. Therefore, the solder failure, pattern failure, part mounting failure are excluded.

# 2. Tools

The following tools are recommended for board analysis:

(1) Oscillator: At a frequency of 100 MHz or higher
(2) Soldering iron: 15 to 20 W for IC replacement. A soldering iron with a higher capacity should be better for the power supply pattern, etc.
(3) Extension cable: See Extension cable list in Chapter 7.

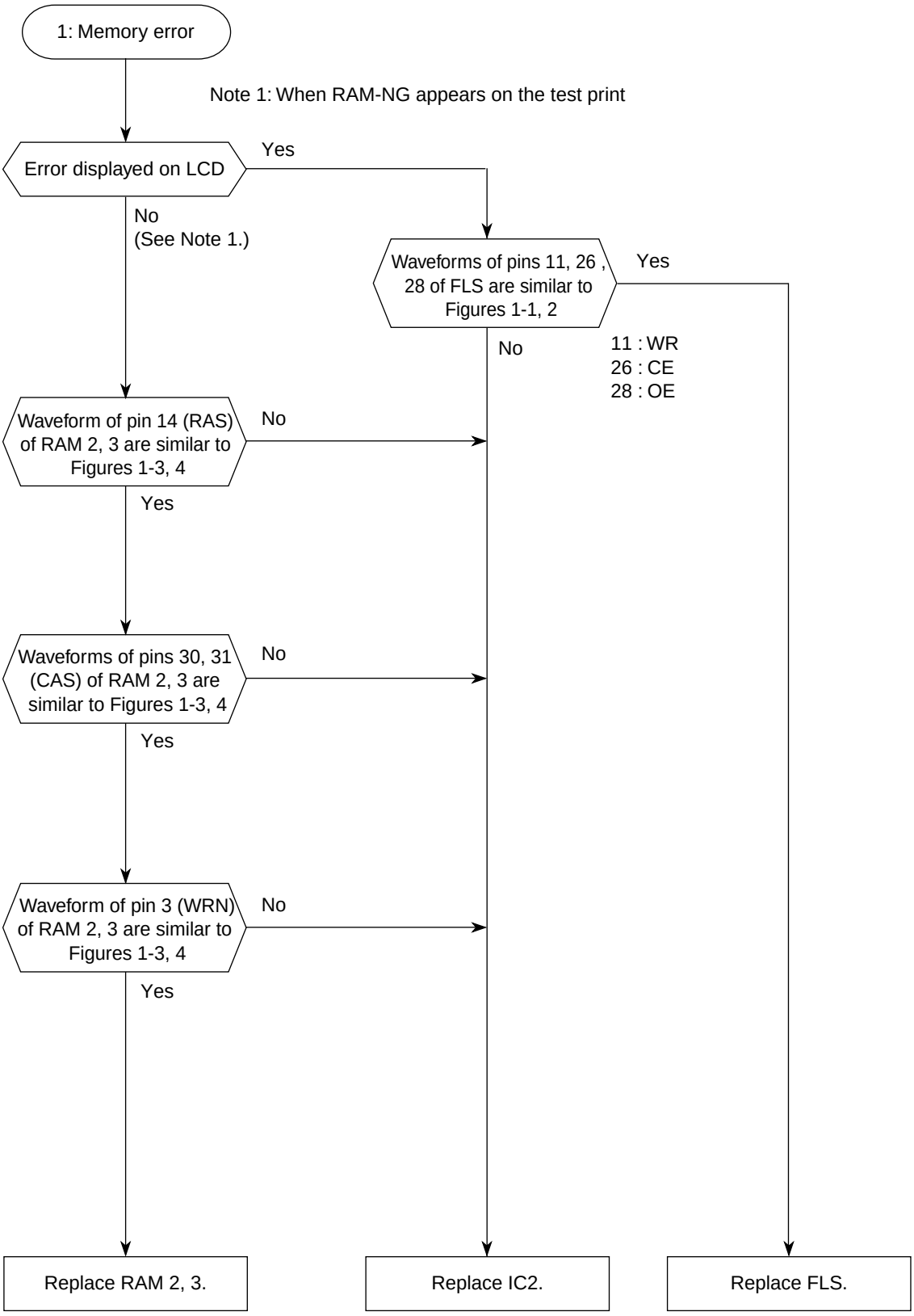
# 3. Description

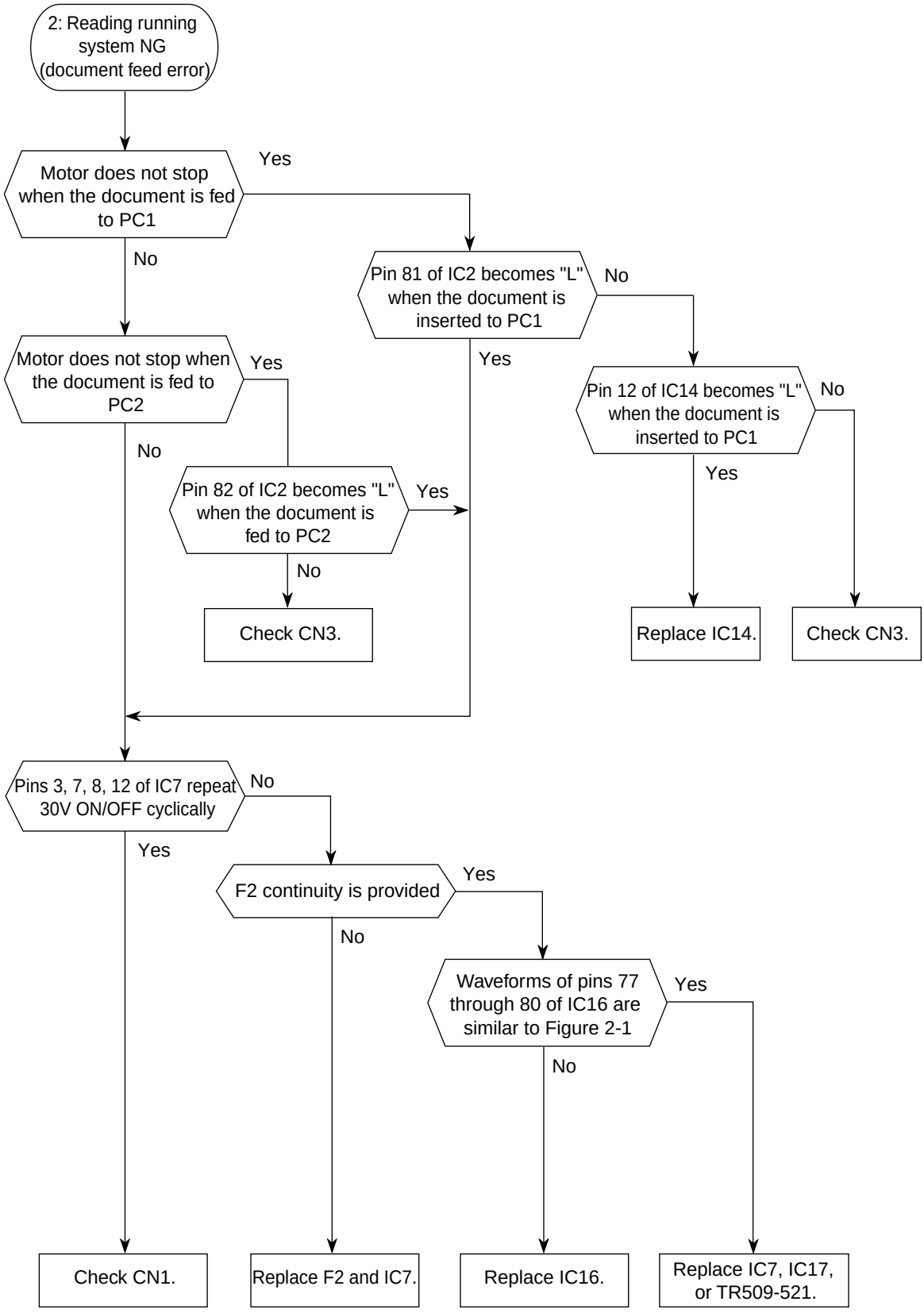
## 3.1 R51 Board

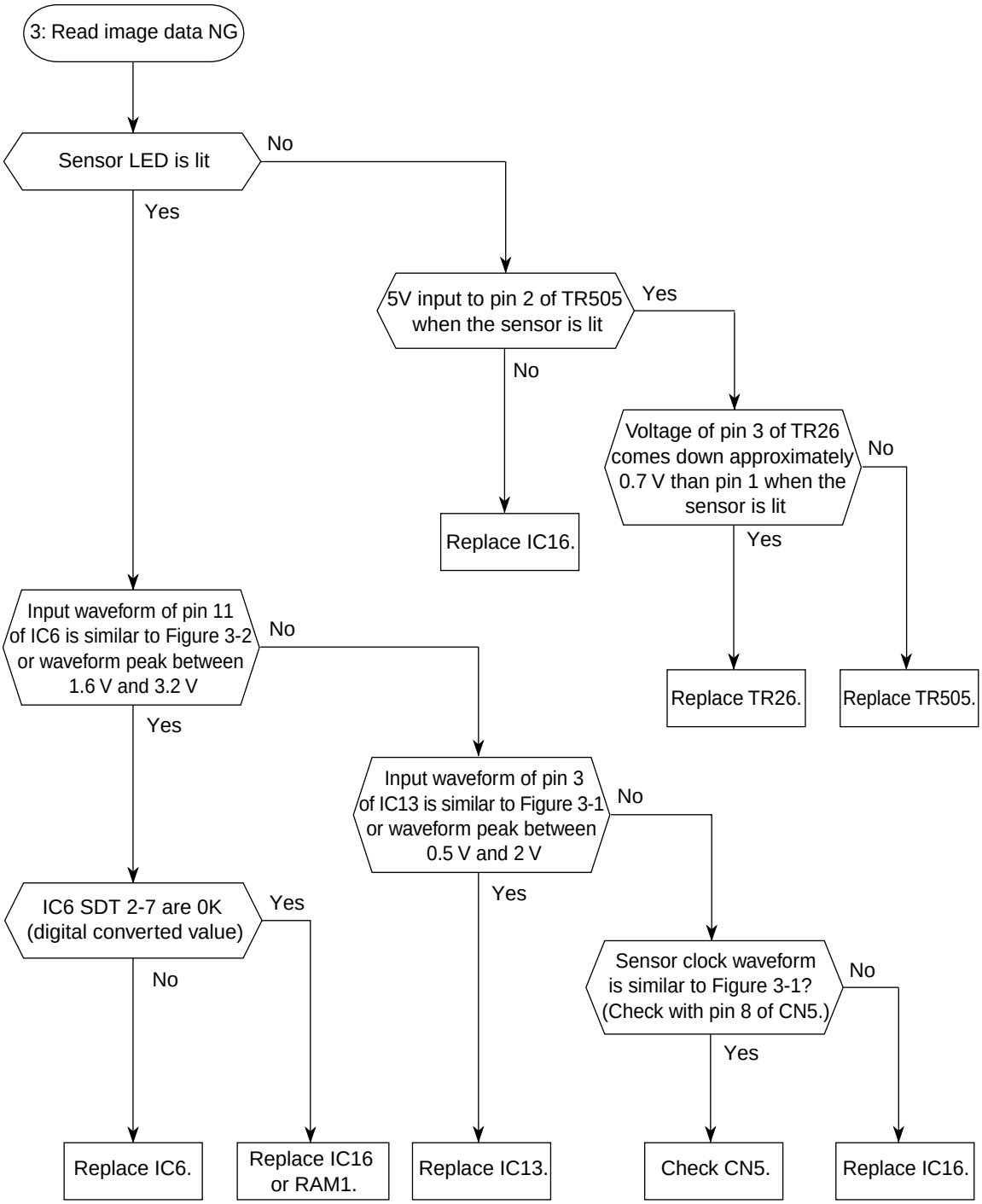
| No. | Description | Remarks | See: |
|---|---|---|---|
| 01 | Memory error | LCD display or test print NG | Figures 1-1, 2, 3, 4 |
| 02 | Reading running system NG | Document feed error, etc. | Figure 2-1 |
| 03 | Read image data NG | All white, all black, image disturbance, etc. | Figures 3-1, 2 |
| 04 | Heater NG | Printer alarm 4, etc. | - |
| 05 | Recording paper running system NG | Recording paper feed error, etc. | Figures 5-1, 2 |
| 06 | Printed image data NG | Sector missing, positive after-image, etc. | Figures 6-1, 2, 3, 4, 5, 6 |
| 07 | Sending NG | Call origination error, protocol sending/ receiving error, etc. | - |
| 08 | Receiving NG | Call termination error, protocol sending/ receiving error, etc. | - |
| 09 | Clock NG | Clock display error, time error, etc. | Figures 9-1, 2 |
| 10 | No sound from the speaker | Buzzer/monitor error, etc. | - |
| 11 | PC I/F not operating correctly | PC print/PC FAX error, etc. | Figures 11-1, 2 |
| 12 | Operation I/F not operating correctly | LCD not displayed, key invalid, etc. | - |

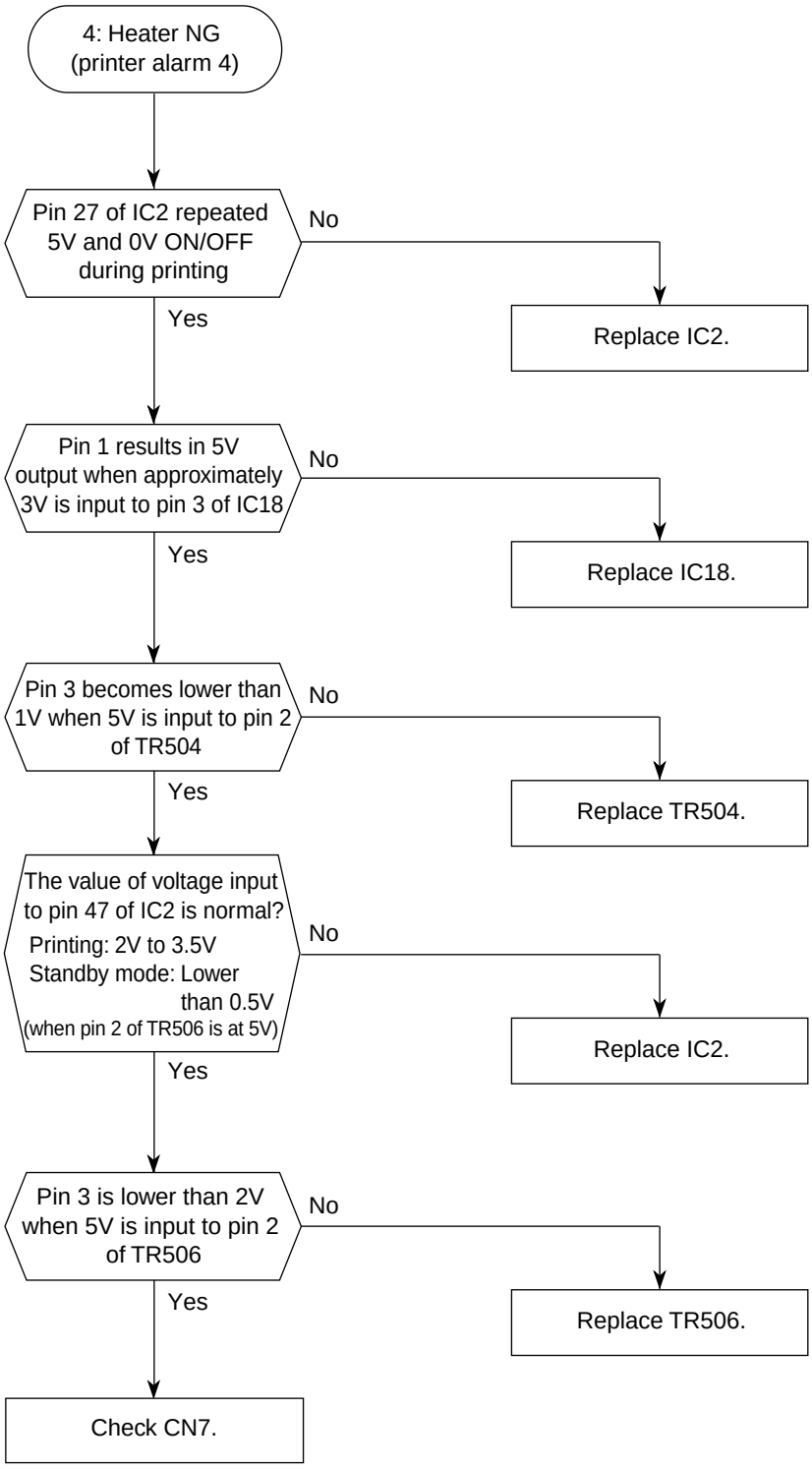
## 3.2 O4W Board

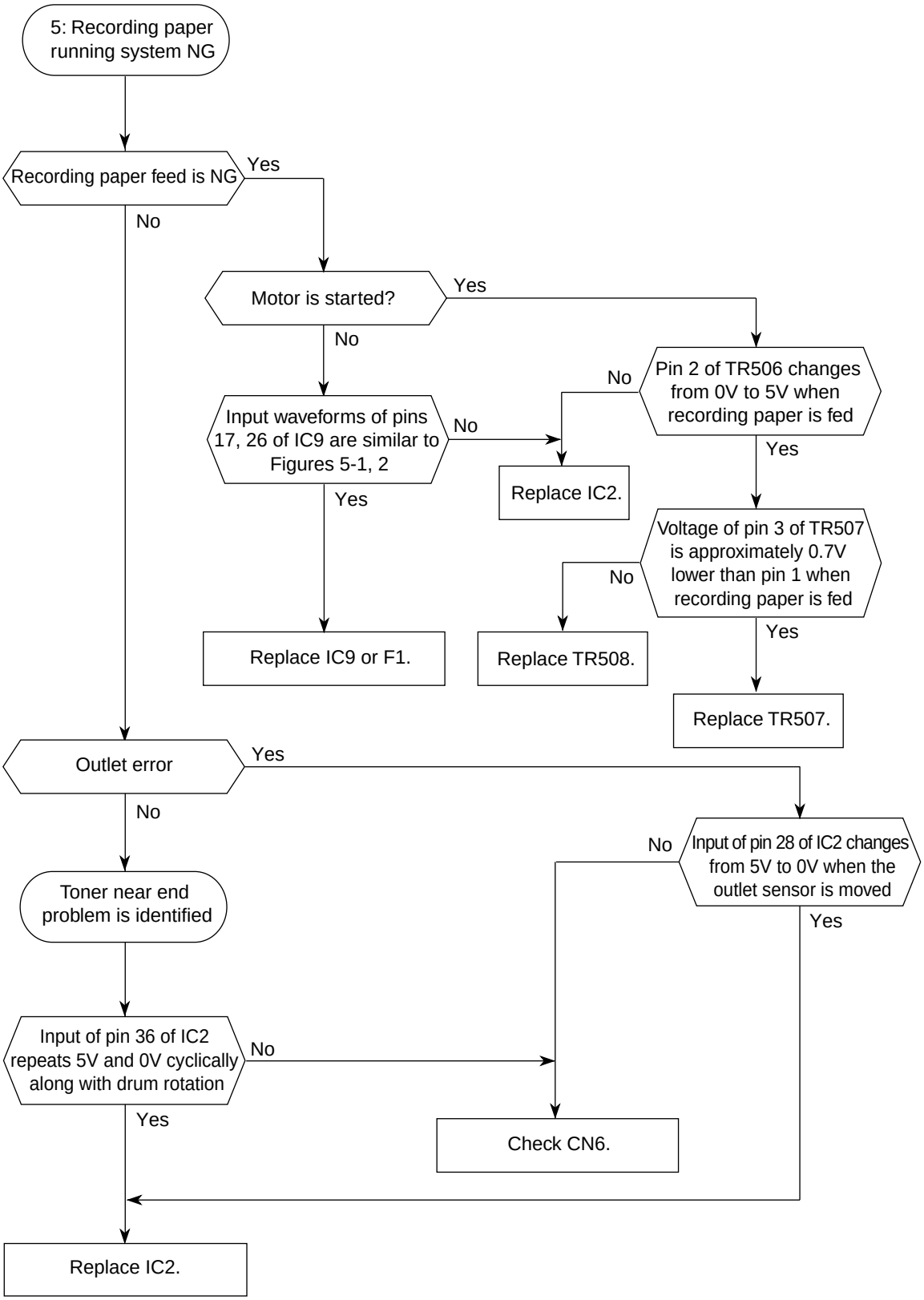
| No. | Description | Remarks | See: |
|---|---|---|---|
| 01 | LCD display NG | LCD not displayed (LCD failures excluded) | |
| 02 | Operation not responded | Key press or LED invalid | |

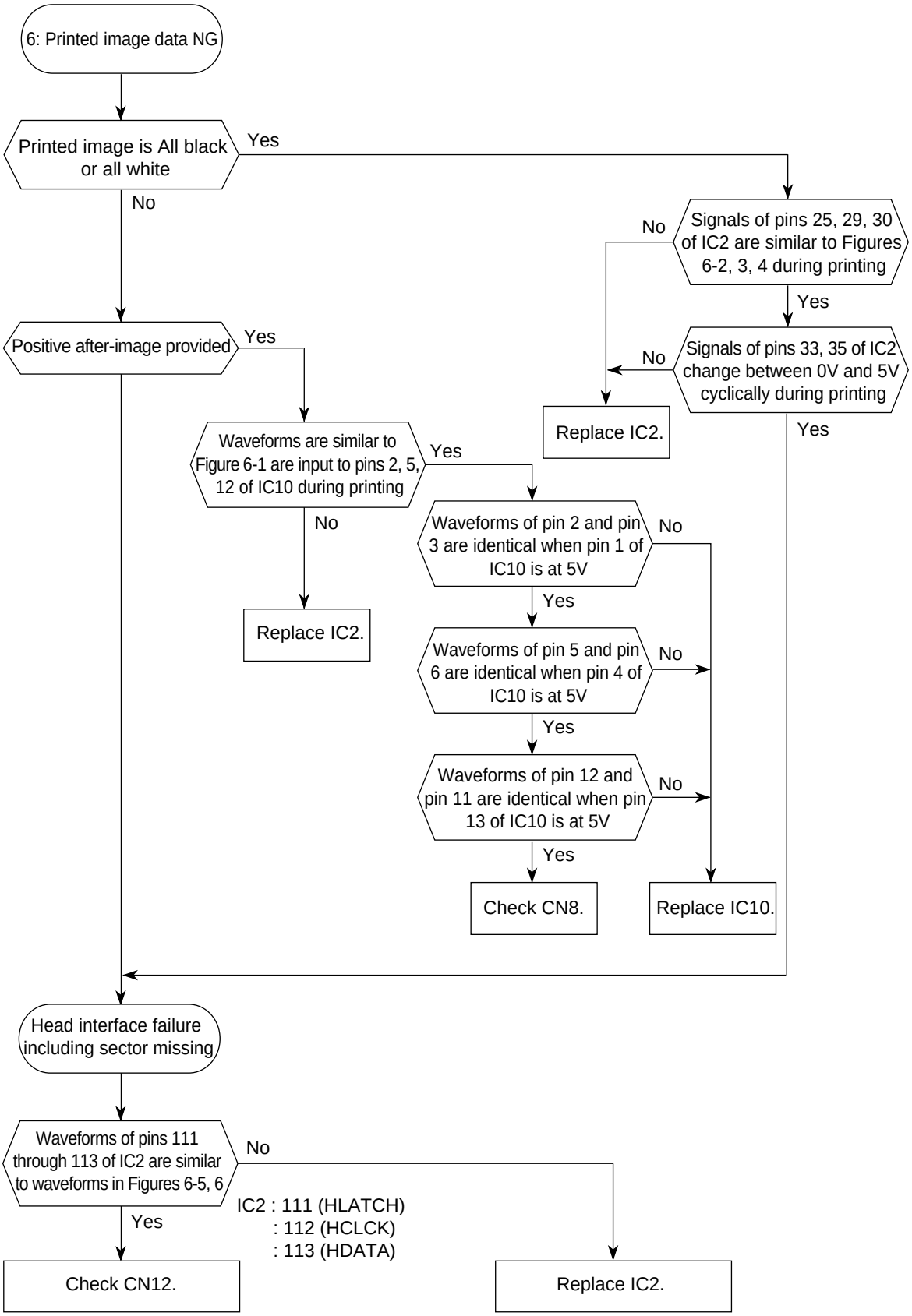

1: Memory error
Note 1: When RAM-NG appears on the test print
Error displayed on LCD
Yes
No
(See Note 1.)
Waveforms of pins 11, 26 , 28 of FLS are similar to Figures 1-1, 2
Yes
No
11 : WR
26 : CE
28 : OE
Waveform of pin 14 (RAS) of RAM 2, 3 are similar to Figures 1-3, 4
No
Yes
Waveforms of pins 30, 31 (CAS) of RAM 2, 3 are similar to Figures 1-3, 4
No
Yes
Waveform of pin 3 (WRN) of RAM 2, 3 are similar to Figures 1-3, 4
No
Yes
Replace RAM 2, 3.
Replace IC2.
Replace FLS.

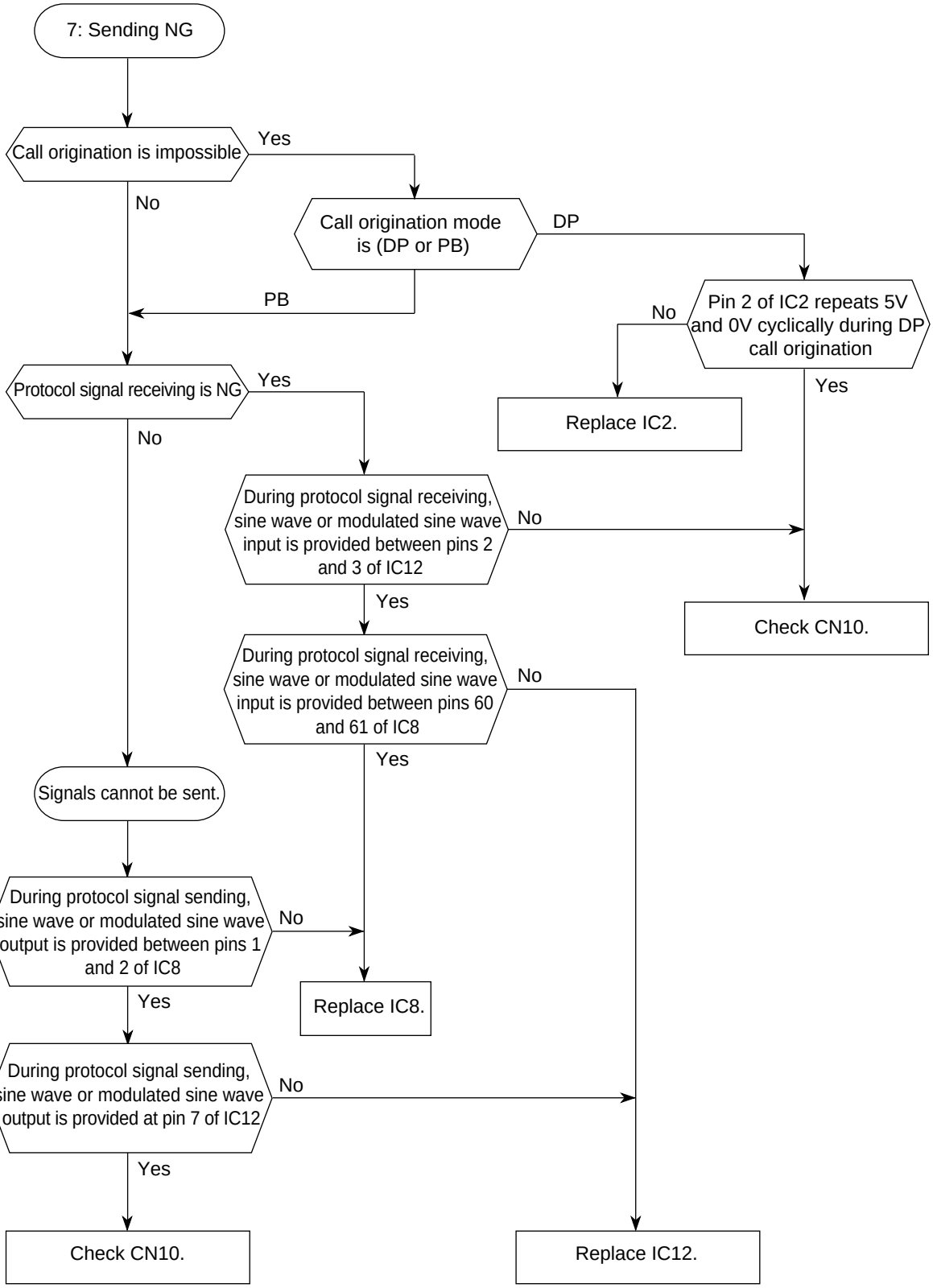

2: Reading running system NG (document feed error)
Motor does not stop when the document is fed to PC1
Yes
No
Pin 81 of IC2 becomes "L" when the document is inserted to PC1
No
Yes
Motor does not stop when the document is fed to PC2
Yes
No
Pin 12 of IC14 becomes "L" when the document is inserted to PC1
No
Yes
Pin 82 of IC2 becomes "L" when the document is fed to PC2
Yes
No
Check CN3.
Replace IC14.
Check CN3.
Pins 3, 7, 8, 12 of IC7 repeat 30V ON/OFF cyclically
No
Yes
F2 continuity is provided
Yes
No
Waveforms of pins 77 through 80 of IC16 are similar to Figure 2-1
Yes
No
Check CN1.
Replace F2 and IC7.
Replace IC16.
Replace IC7, IC17, or TR509-521.

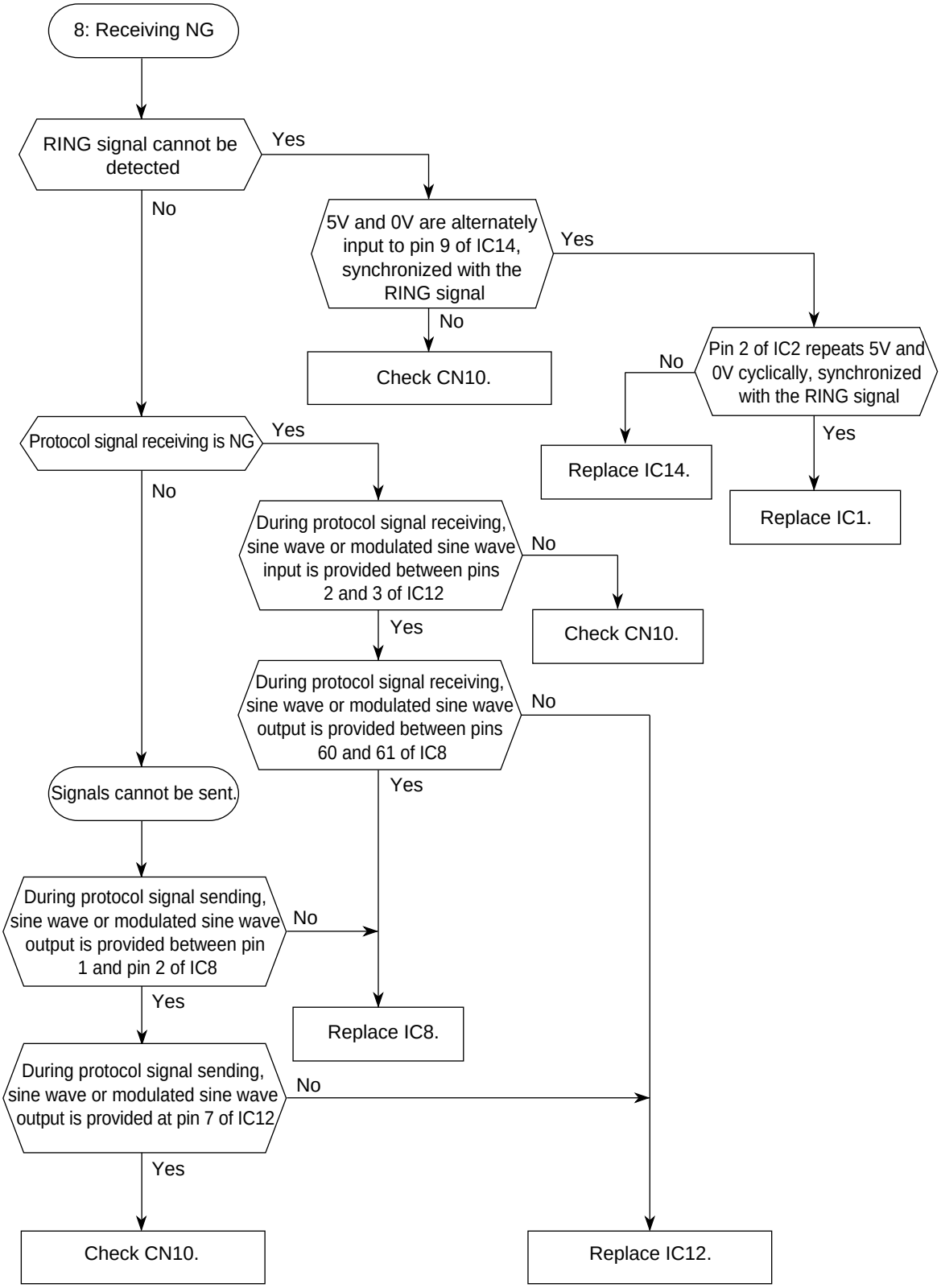

3: Read image data NG
Sensor LED is lit
No
Yes
5V input to pin 2 of TR505 when the sensor is lit
Yes
No
Replace IC16.
Voltage of pin 3 of TR26 comes down approximately 0.7 V than pin 1 when the sensor is lit
No
Yes
Replace TR26.
Replace TR505.
Input waveform of pin 11 of IC6 is similar to Figure 3-2 or waveform peak between 1.6 V and 3.2 V
No
Yes
Input waveform of pin 3 of IC13 is similar to Figure 3-1 or waveform peak between 0.5 V and 2 V
No
Yes
IC6 SDT 2-7 are 0K (digital converted value)
Yes
No
Sensor clock waveform is similar to Figure 3-1? (Check with pin 8 of CN5.)
No
Yes
Replace IC6.
Replace IC16 or RAM1.
Replace IC13.
Check CN5.
Replace IC16.

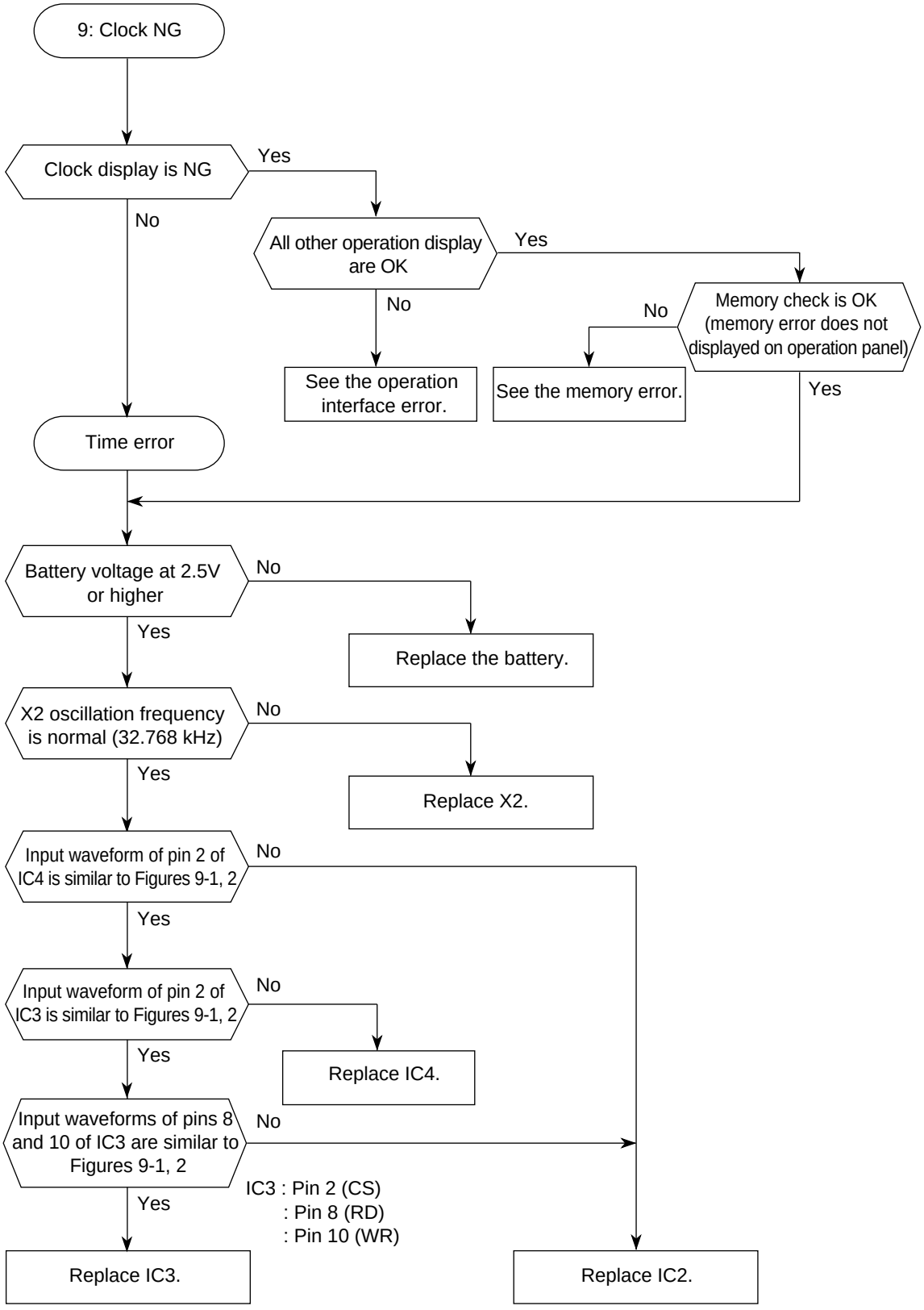

4: Heater NG
(printer alarm 4)
Pin 27 of IC2 repeated 5V and 0V ON/OFF during printing
No
Yes
Replace IC2.
Pin 1 results in 5V output when approximately 3V is input to pin 3 of IC18
No
Yes
Replace IC18.
Pin 3 becomes lower than 1V when 5V is input to pin 2 of TR504
No
Yes
Replace TR504.
The value of voltage input to pin 47 of IC2 is normal?
Printing: 2V to 3.5V
Standby mode: Lower than 0.5V
(when pin 2 of TR506 is at 5V)
No
Yes
Replace IC2.
Pin 3 is lower than 2V when 5V is input to pin 2 of TR506
No
Yes
Replace TR506.
Check CN7.

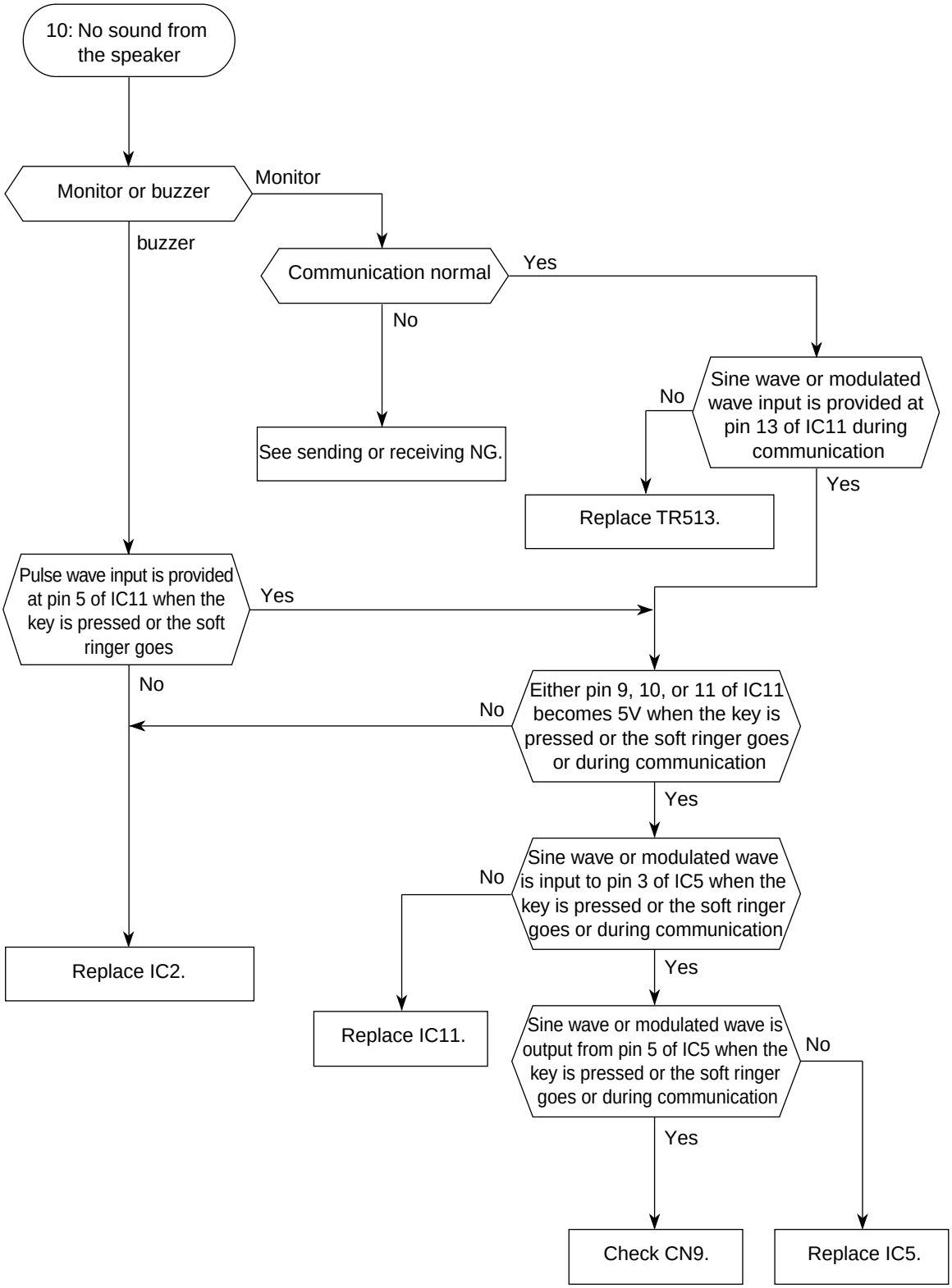

5: Recording paper running system NG
Recording paper feed is NG
Yes
No
Motor is started?
Yes
No
Input waveforms of pins 17, 26 of IC9 are similar to Figures 5-1, 2
No
Yes
Replace IC9 or F1.
Replace IC2.
Pin 2 of TR506 changes from 0V to 5V when recording paper is fed
No
Yes
Voltage of pin 3 of TR507 is approximately 0.7V lower than pin 1 when recording paper is fed
No
Yes
Replace TR508.
Replace TR507.
Outlet error
Yes
No
Toner near end problem is identified
Input of pin 36 of IC2 repeats 5V and 0V cyclically along with drum rotation
No
Yes
Input of pin 28 of IC2 changes from 5V to 0V when the outlet sensor is moved
No
Yes
Check CN6.
Replace IC2.

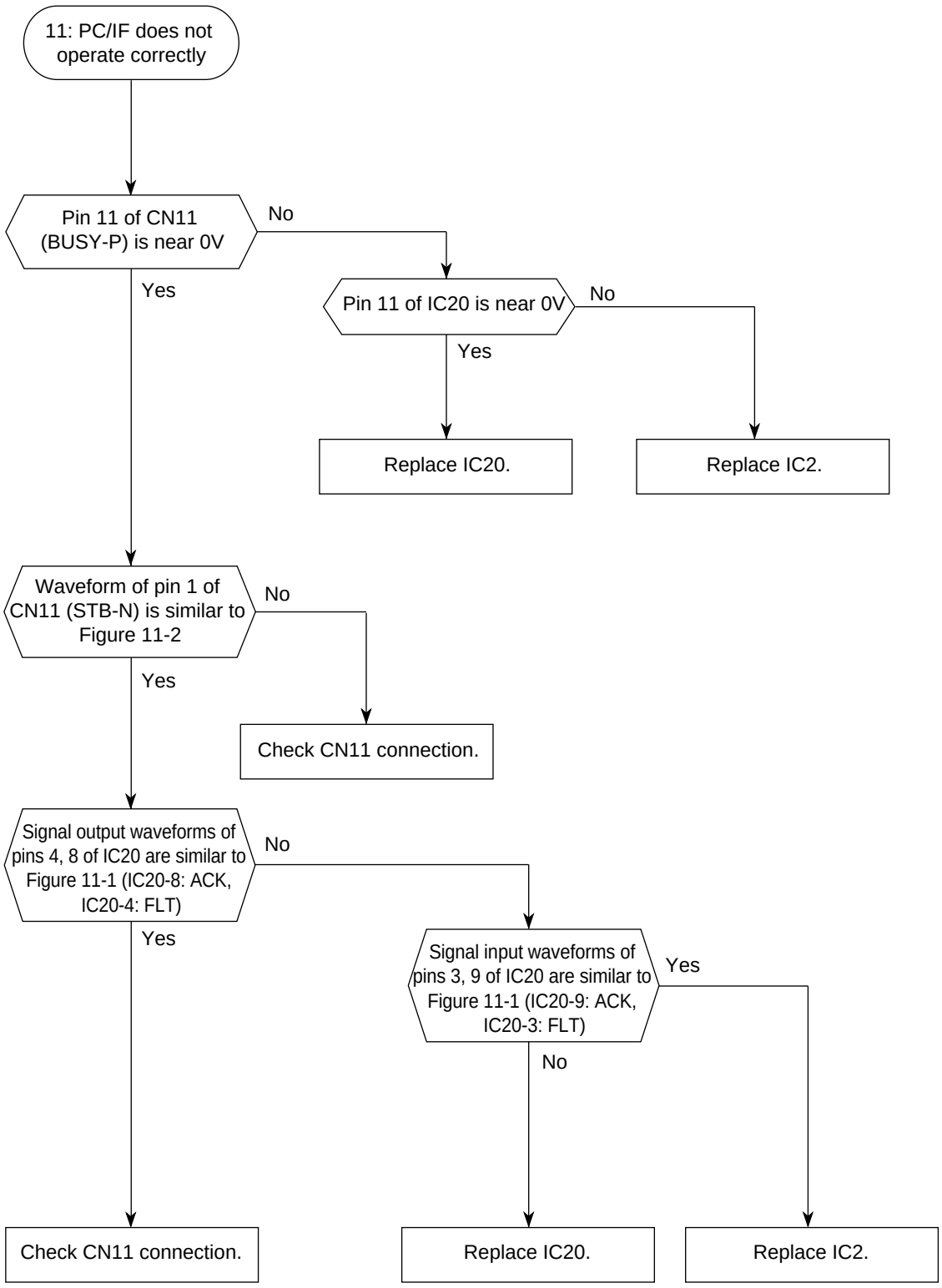

6: Printed image data NG
Printed image is All black or all white
Yes
No
Signals of pins 25, 29, 30 of IC2 are similar to Figures 6-2, 3, 4 during printing
No
Yes
Signals of pins 33, 35 of IC2 change between 0V and 5V cyclically during printing
No
Yes
Replace IC2.
Positive after-image provided
Yes
Waveforms are similar to Figure 6-1 are input to pins 2, 5, 12 of IC10 during printing
Yes
No
Replace IC2.
Waveforms of pin 2 and pin 3 are identical when pin 1 of IC10 is at 5V
No
Yes
Waveforms of pin 5 and pin 6 are identical when pin 4 of IC10 is at 5V
No
Yes
Waveforms of pin 12 and pin 11 are identical when pin 13 of IC10 is at 5V
No
Yes
Check CN8.
Replace IC10.
Head interface failure including sector missing
Waveforms of pins 111 through 113 of IC2 are similar to waveforms in Figures 6-5, 6
No
Yes
IC2 : 111 (HLATCH)
: 112 (HCLCK)
: 113 (HDATA)
Check CN12.
Replace IC2.

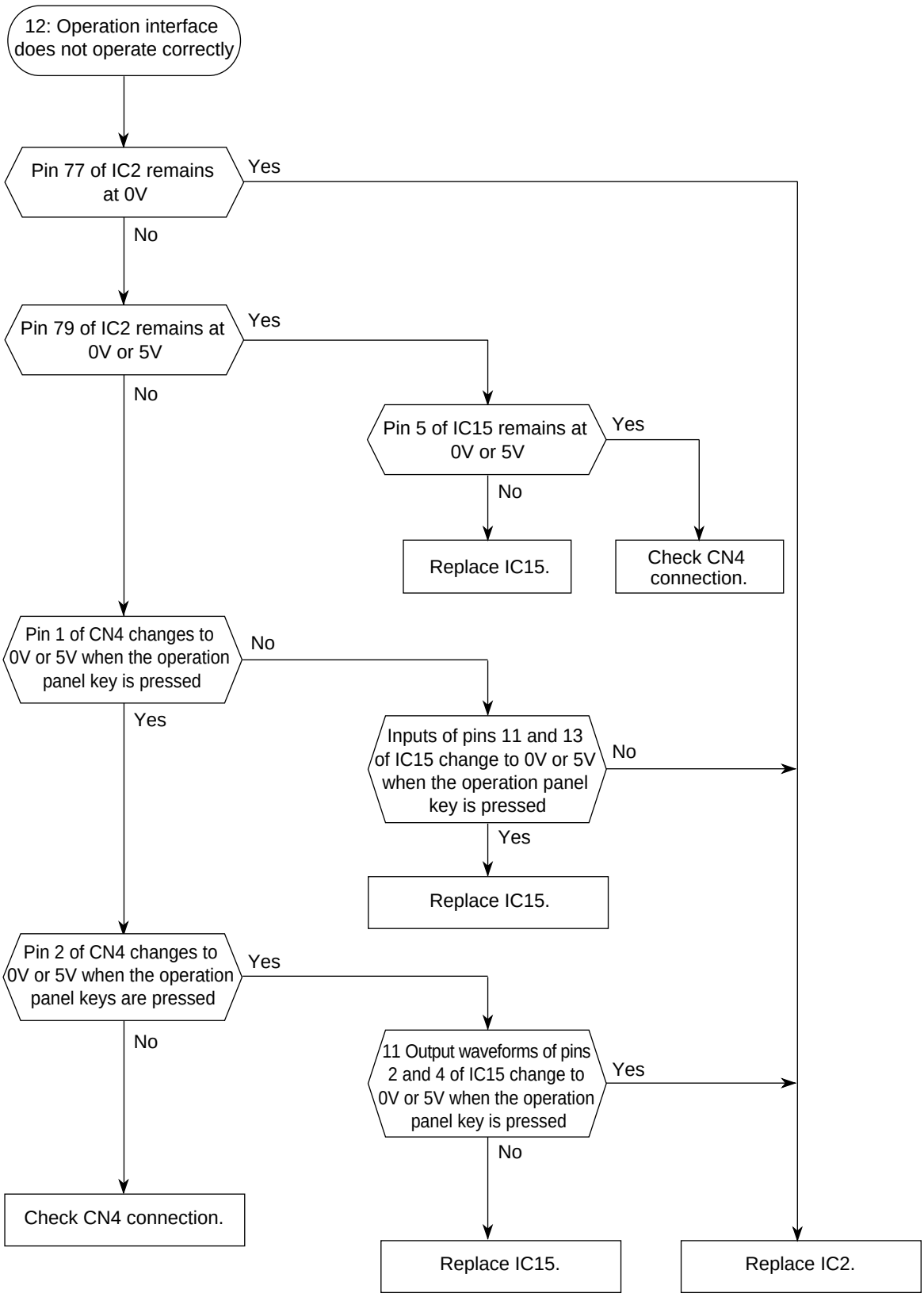

7: Sending NG
Call origination is impossible
Yes
No
Call origination mode is (DP or PB)
DP
PB
Pin 2 of IC2 repeats 5V and 0V cyclically during DP call origination
No
Yes
Replace IC2.
Protocol signal receiving is NG
Yes
No
During protocol signal receiving, sine wave or modulated sine wave input is provided between pins 2 and 3 of IC12
No
Yes
Check CN10.
During protocol signal receiving, sine wave or modulated sine wave input is provided between pins 60 and 61 of IC8
No
Yes
Signals cannot be sent.
During protocol signal sending, sine wave or modulated sine wave output is provided between pins 1 and 2 of IC8
No
Yes
Replace IC8.
During protocol signal sending, sine wave or modulated sine wave output is provided at pin 7 of IC12
No
Yes
Check CN10.
Replace IC12.

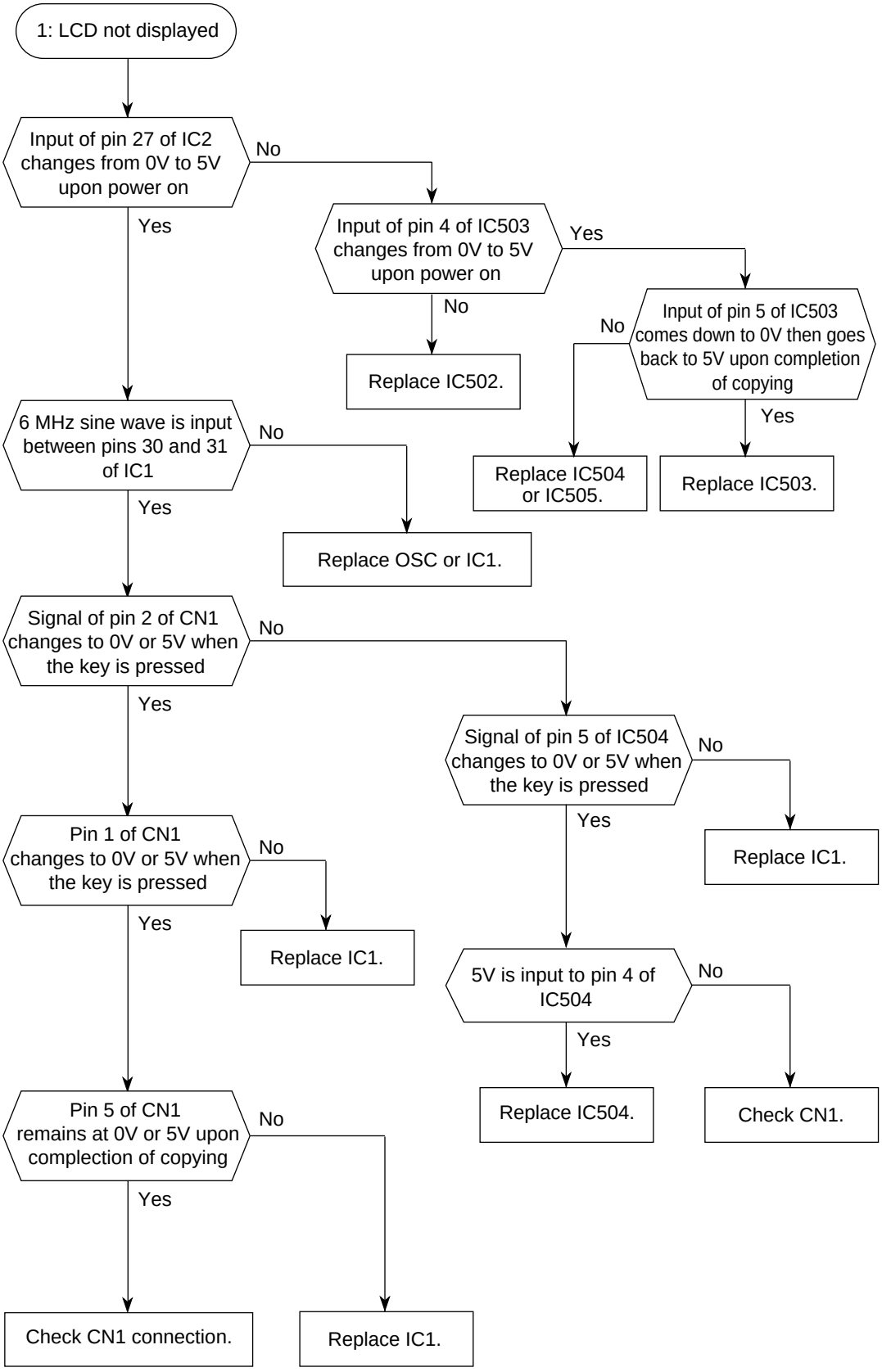

8: Receiving NG
RING signal cannot be detected
Yes
No
5V and 0V are alternately input to pin 9 of IC14, synchronized with the RING signal
Yes
No
Check CN10.
Pin 2 of IC2 repeats 5V and 0V cyclically, synchronized with the RING signal
No
Yes
Replace IC14.
Replace IC1.
Protocol signal receiving is NG
Yes
No
During protocol signal receiving, sine wave or modulated sine wave input is provided between pins 2 and 3 of IC12
No
Yes
Check CN10.
During protocol signal receiving, sine wave or modulated sine wave output is provided between pins 60 and 61 of IC8
No
Yes
Signals cannot be sent.
During protocol signal sending, sine wave or modulated sine wave output is provided between pin 1 and pin 2 of IC8
No
Yes
Replace IC8.
During protocol signal sending, sine wave or modulated sine wave output is provided at pin 7 of IC12
No
Yes
Check CN10.
Replace IC12.

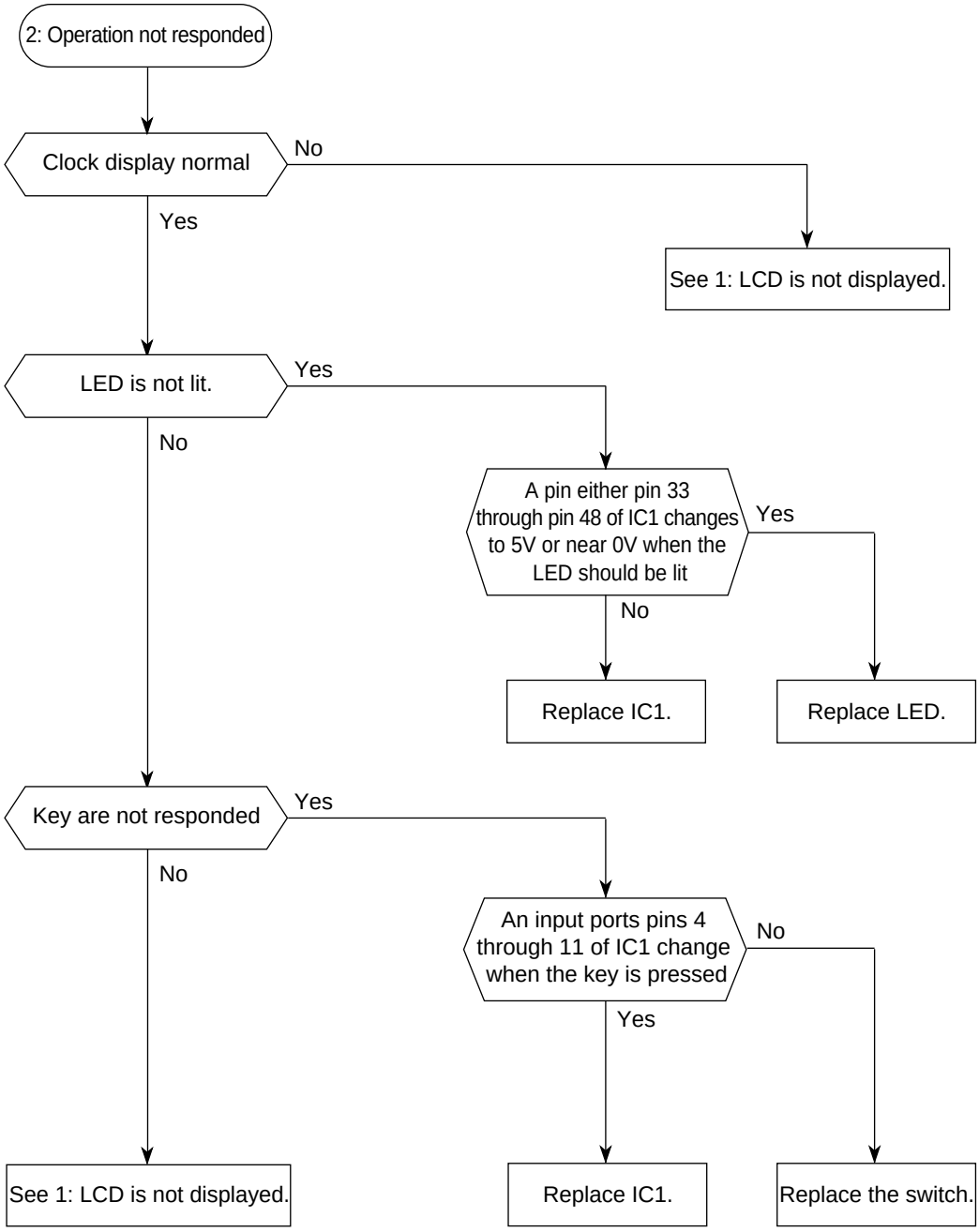

9: Clock NG
Clock display is NG
Yes
No
All other operation display are OK
Yes
No
Memory check is OK (memory error does not displayed on operation panel)
No
Yes
See the operation interface error.
See the memory error.
Time error
Battery voltage at 2.5V or higher
No
Yes
Replace the battery.
X2 oscillation frequency is normal (32.768 kHz)
No
Yes
Replace X2.
Input waveform of pin 2 of IC4 is similar to Figures 9-1, 2
No
Yes
Input waveform of pin 2 of IC3 is similar to Figures 9-1, 2
No
Yes
Replace IC4.
Input waveforms of pins 8 and 10 of IC3 are similar to Figures 9-1, 2
No
Yes
IC3 : Pin 2 (CS)
: Pin 8 (RD)
: Pin 10 (WR)
Replace IC3.
Replace IC2.


10: No sound from the speaker
Monitor or buzzer
Monitor
buzzer
Communication normal
Yes
No
See sending or receiving NG.
Sine wave or modulated wave input is provided at pin 13 of IC11 during communication
No
Yes
Replace TR513.
Pulse wave input is provided at pin 5 of IC11 when the key is pressed or the soft ringer goes
Yes
No
Either pin 9, 10, or 11 of IC11 becomes 5V when the key is pressed or the soft ringer goes or during communication
No
Yes
Sine wave or modulated wave is input to pin 3 of IC5 when the key is pressed or the soft ringer goes or during communication
No
Yes
Replace IC2.
Replace IC11.
Sine wave or modulated wave is output from pin 5 of IC5 when the key is pressed or the soft ringer goes or during communication
No
Yes
Check CN9.
Replace IC5.


11: PC/IF does not operate correctly
Pin 11 of CN11 (BUSY-P) is near 0V
No
Yes
Pin 11 of IC20 is near 0V
No
Yes
Replace IC20.
Replace IC2.
Waveform of pin 1 of CN11 (STB-N) is similar to Figure 11-2
No
Yes
Check CN11 connection.
Signal output waveforms of pins 4, 8 of IC20 are similar to Figure 11-1 (IC20-8: ACK, IC20-4: FLT)
No
Yes
Signal input waveforms of pins 3, 9 of IC20 are similar to Figure 11-1 (IC20-9: ACK, IC20-3: FLT)
Yes
No
Check CN11 connection.
Replace IC20.
Replace IC2.


12: Operation interface does not operate correctly
Pin 77 of IC2 remains at 0V
Yes
No
Pin 79 of IC2 remains at 0V or 5V
Yes
No
Pin 5 of IC15 remains at 0V or 5V
Yes
No
Replace IC15.
Check CN4 connection.
Pin 1 of CN4 changes to 0V or 5V when the operation panel key is pressed
No
Yes
Inputs of pins 11 and 13 of IC15 change to 0V or 5V when the operation panel key is pressed
No
Yes
Replace IC15.
Pin 2 of CN4 changes to 0V or 5V when the operation panel keys are pressed
Yes
No
11 Output waveforms of pins 2 and 4 of IC15 change to 0V or 5V when the operation panel key is pressed
Yes
No
Check CN4 connection.
Replace IC15.
Replace IC2.


1: LCD not displayed
Input of pin 27 of IC2 changes from 0V to 5V upon power on
No
Yes
Input of pin 4 of IC503 changes from 0V to 5V upon power on
Yes
No
Replace IC502.
Input of pin 5 of IC503 comes down to 0V then goes back to 5V upon completion of copying
No
Yes
Replace IC504 or IC505.
Replace IC503.
6 MHz sine wave is input between pins 30 and 31 of IC1
No
Yes
Replace OSC or IC1.
Signal of pin 2 of CN1 changes to 0V or 5V when the key is pressed
No
Yes
Signal of pin 5 of IC504 changes to 0V or 5V when the key is pressed
No
Yes
Replace IC1.
Pin 1 of CN1 changes to 0V or 5V when the key is pressed
No
Yes
Replace IC1.
5V is input to pin 4 of IC504
No
Yes
Replace IC504.
Check CN1.
Pin 5 of CN1 remains at 0V or 5V upon complection of copying
No
Yes
Check CN1 connection.
Replace IC1.


2: Operation not responded
Clock display normal
No
Yes
See 1: LCD is not displayed.
LED is not lit.
Yes
No
A pin either pin 33 through pin 48 of IC1 changes to 5V or near 0V when the LED should be lit
Yes
No
Replace IC1.
Replace LED.
Key are not responded
Yes
No
An input ports pins 4 through 11 of IC1 change when the key is pressed
No
Yes
See 1: LCD is not displayed.
Replace IC1.
Replace the switch.

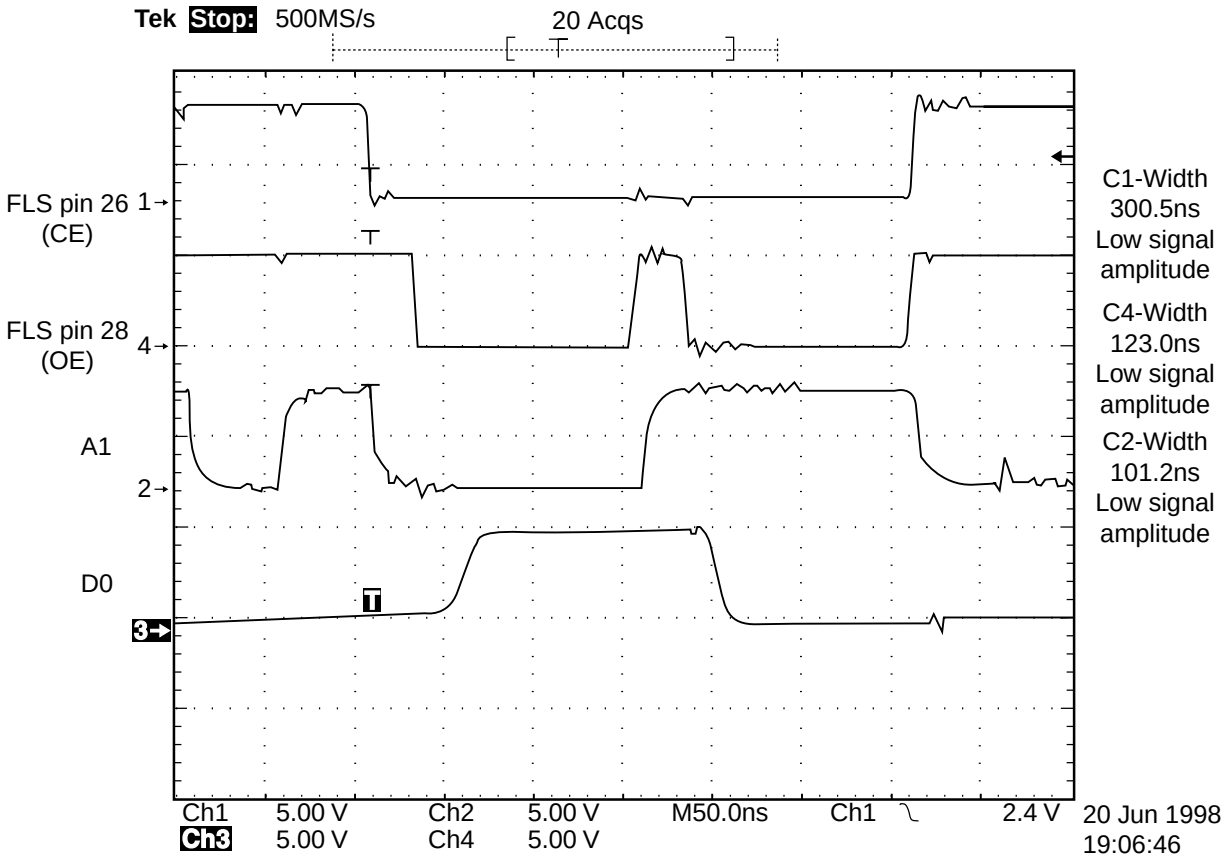



**Figure 1-1 FLASH RD**

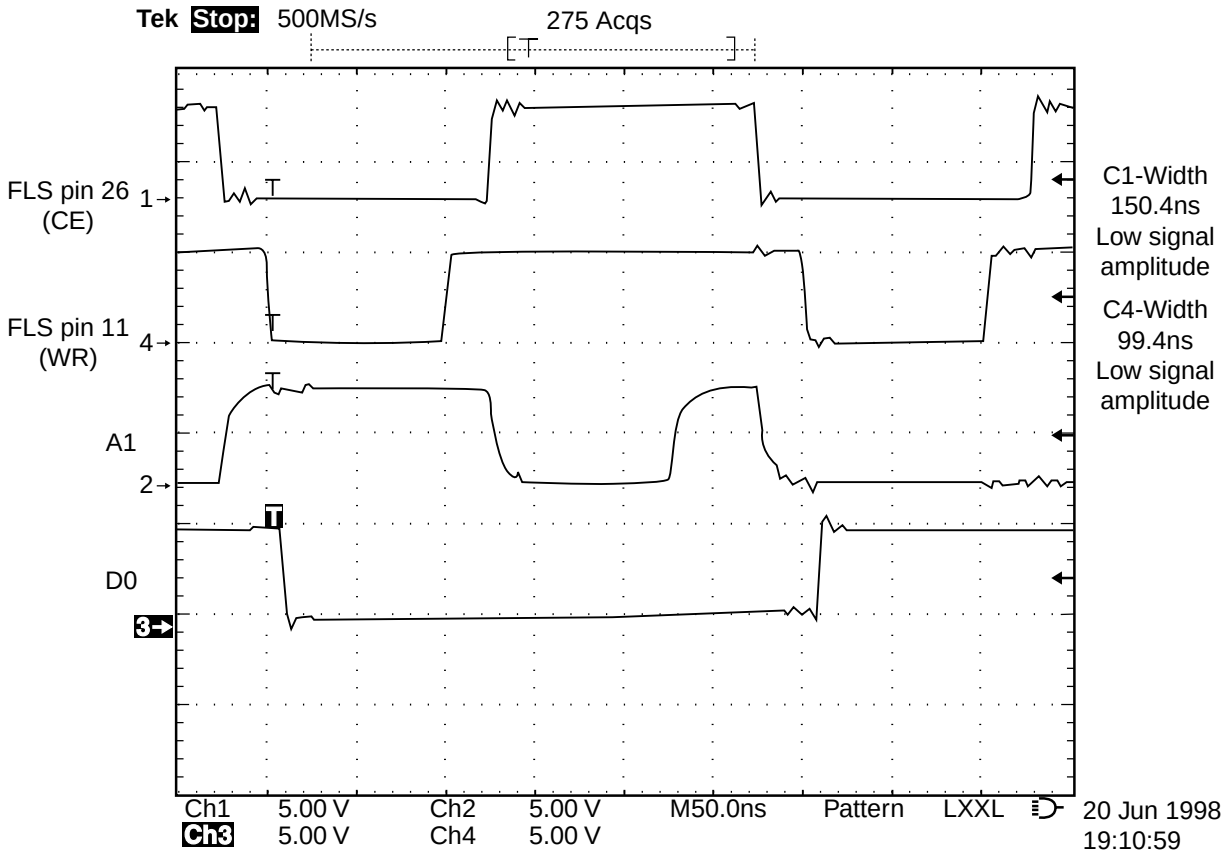



**Figure 1-2 FLASH WR**

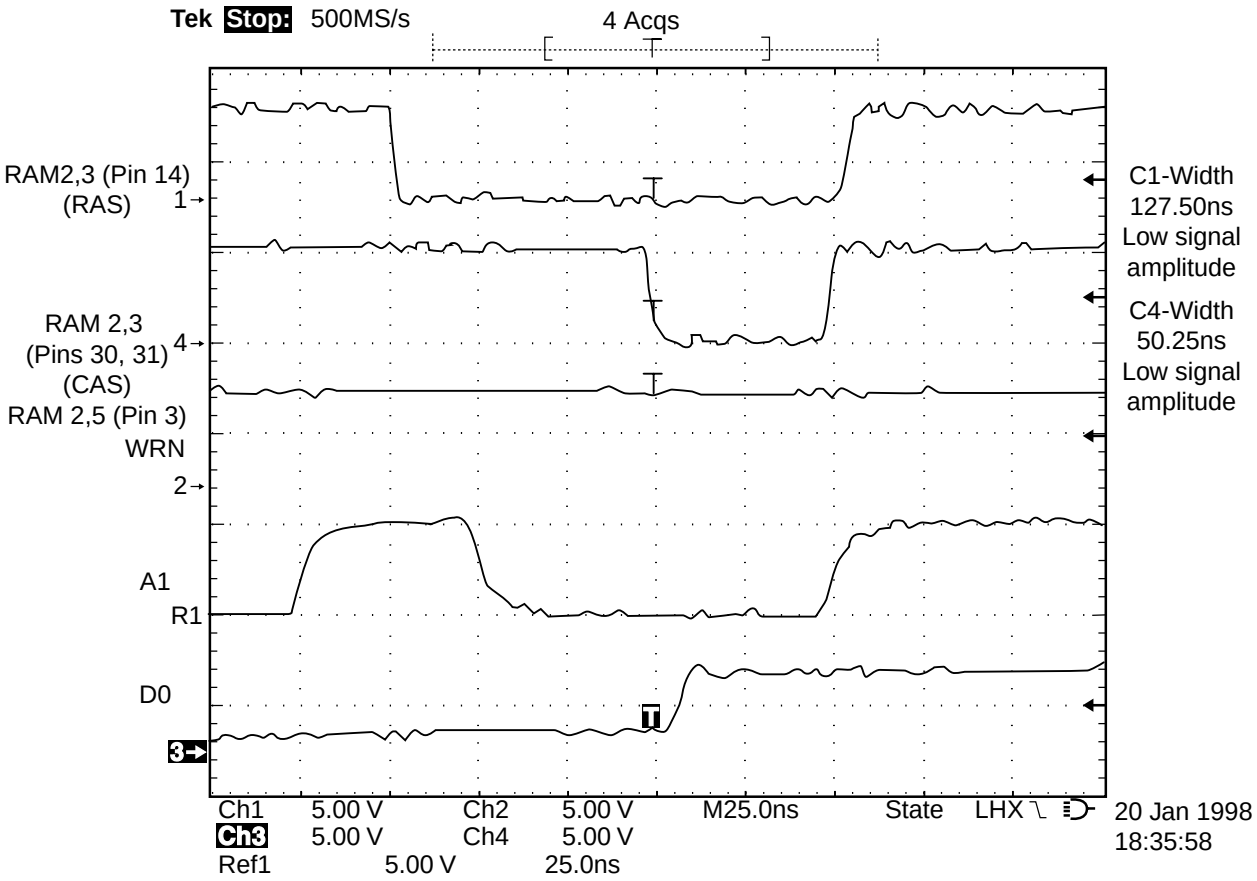



**Figure 1-3 DRAM RD**

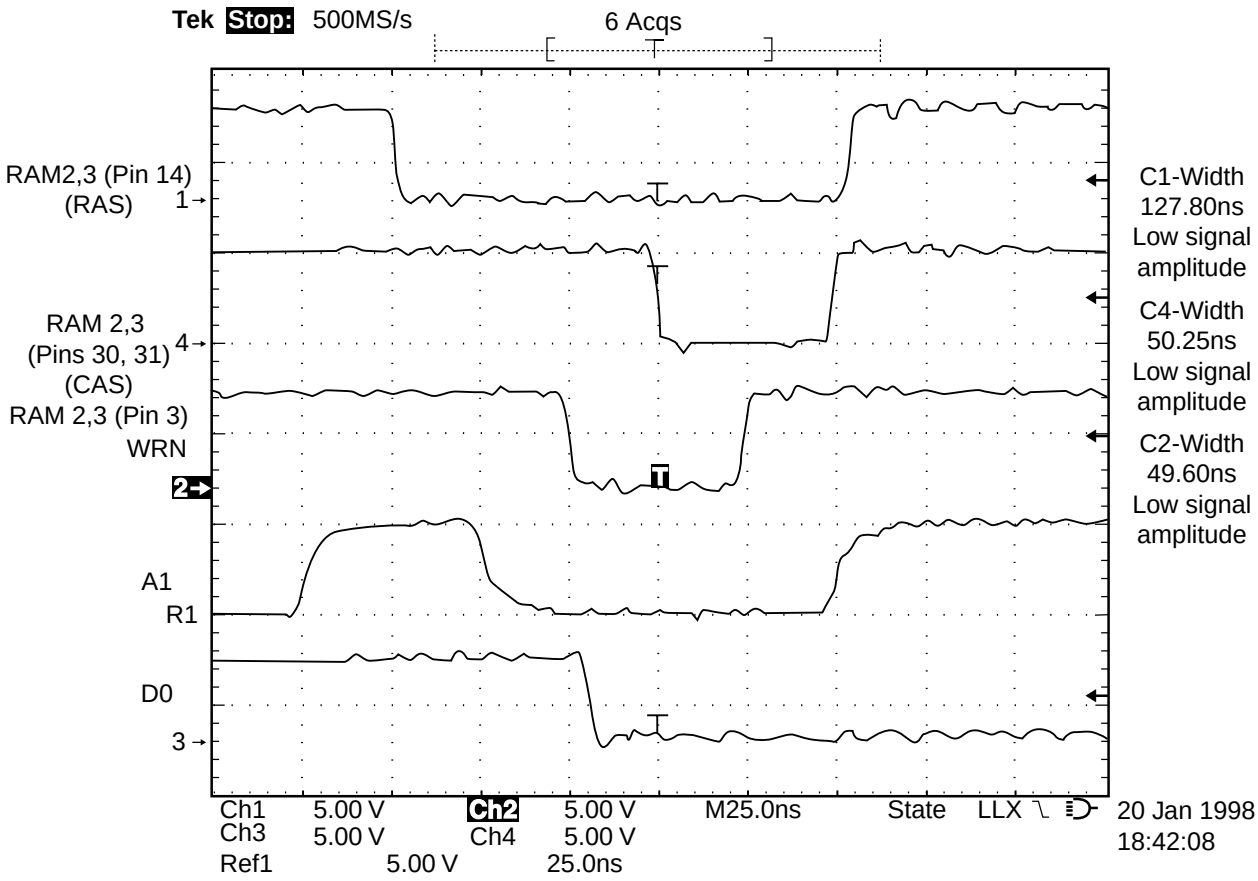



**Figure 1-4 DRAM WR**

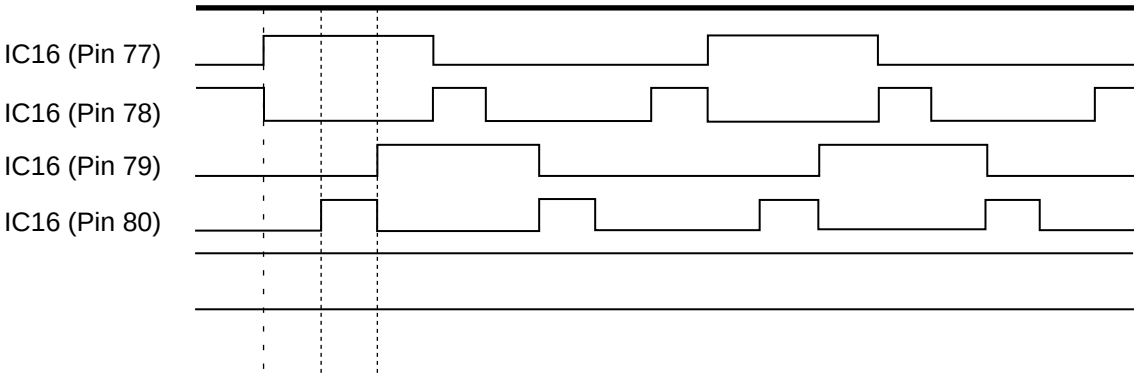



**Figure 2.1**

CH1 500mV A 100ns 2.31 V CH2
CH2 2V

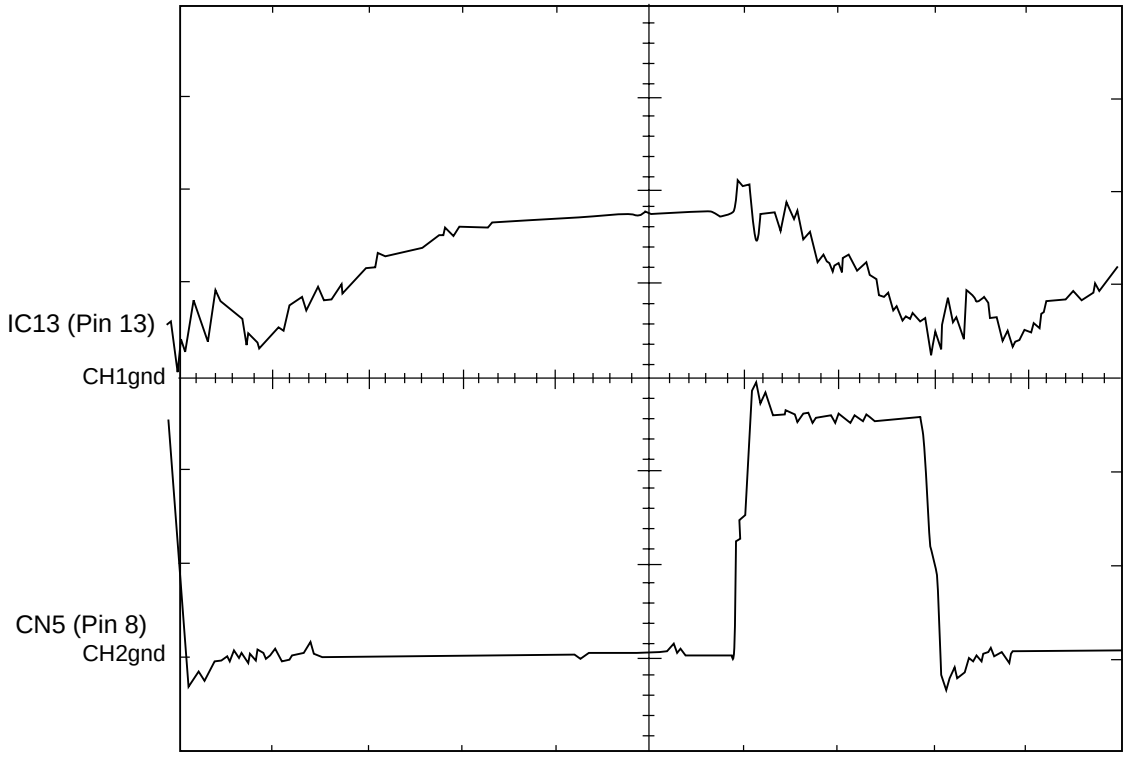



**Figure 3-1**

CH1 1V A 100ns 2.30 V CH2
CH2 5V

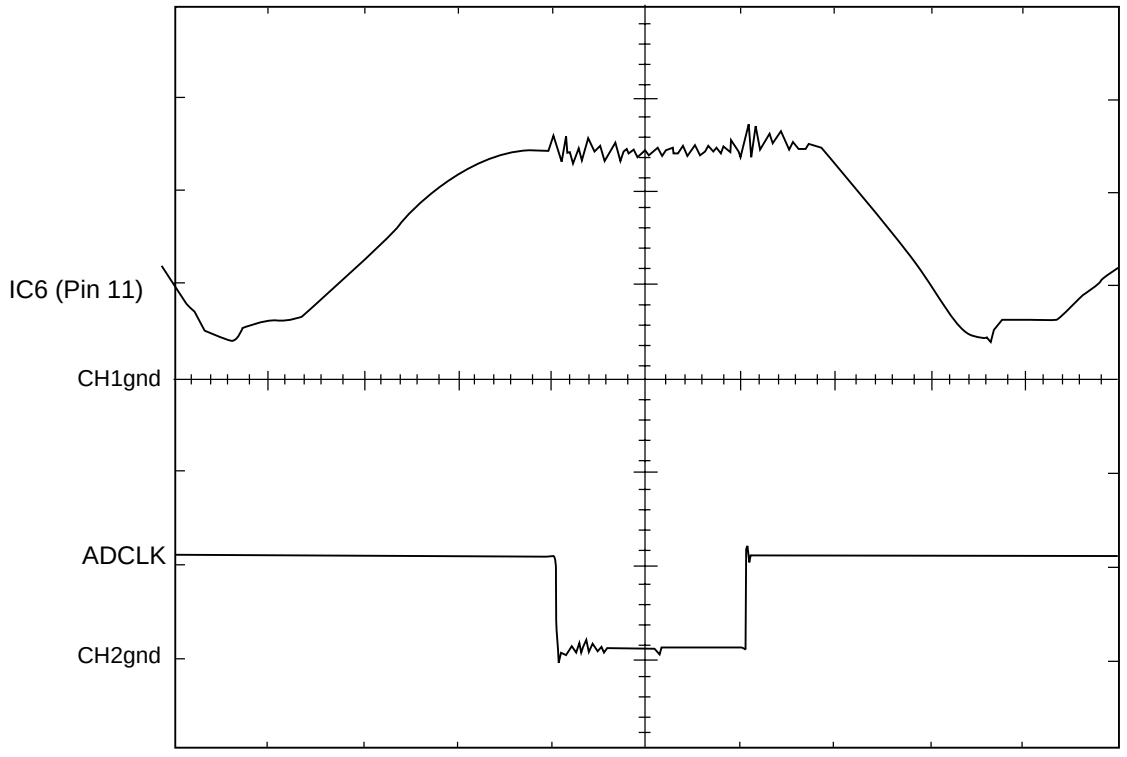



**Figure 3-2**

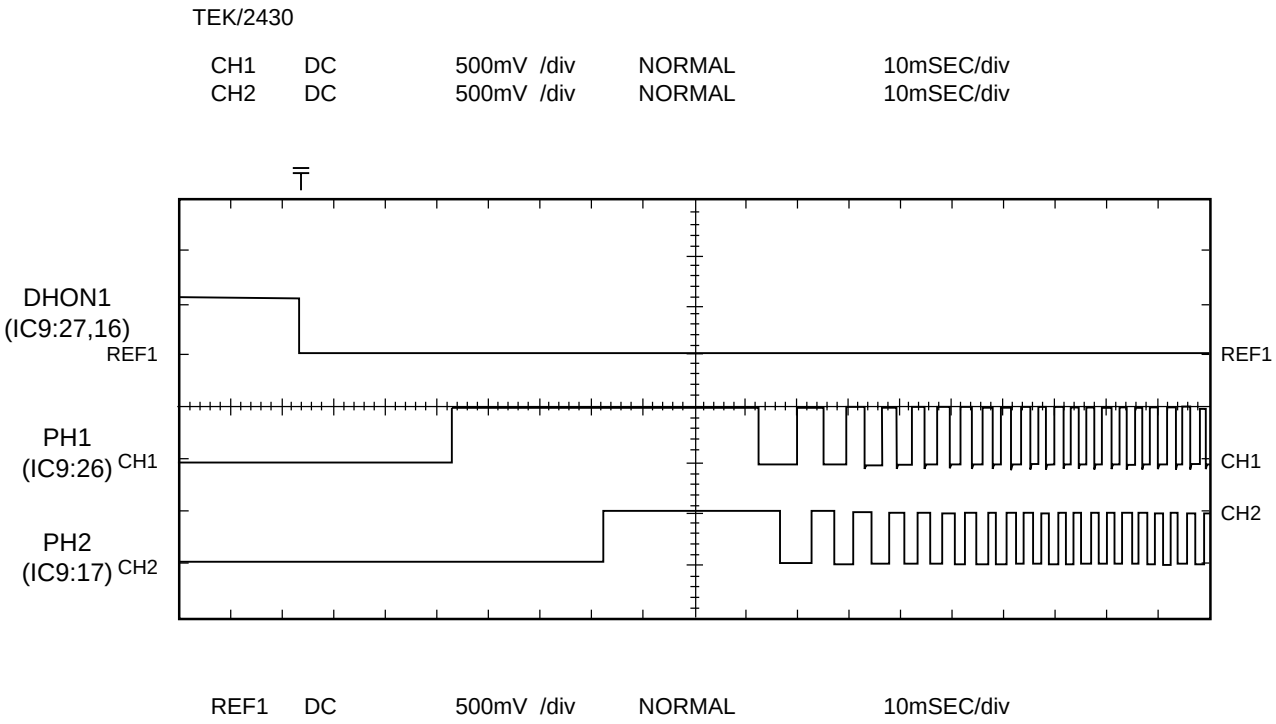



**Figure 5-1**

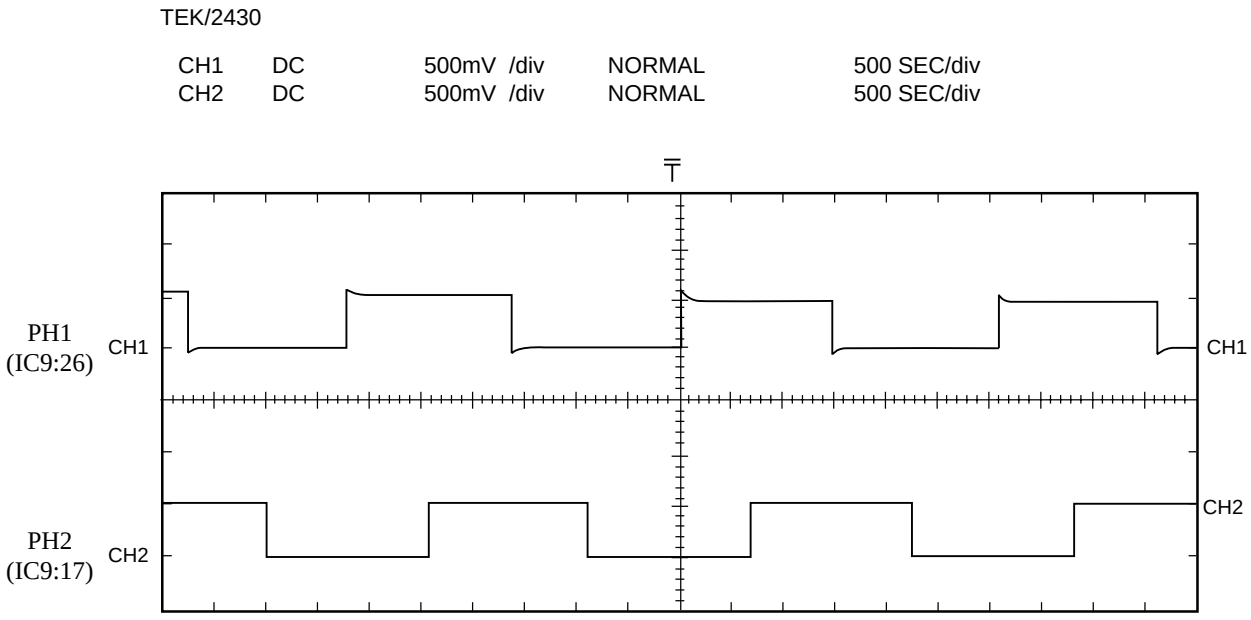



**Figure 5-2**

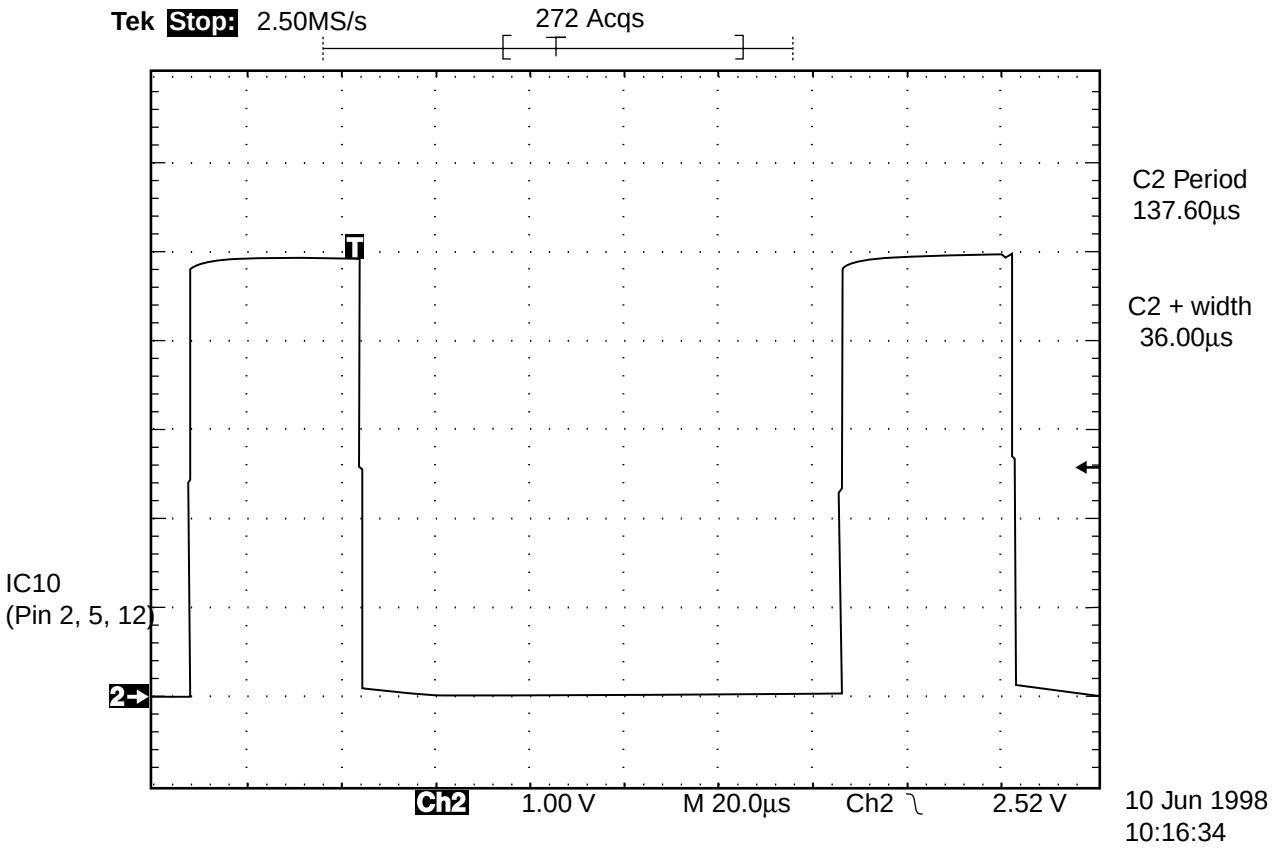



**Figure 6-1**

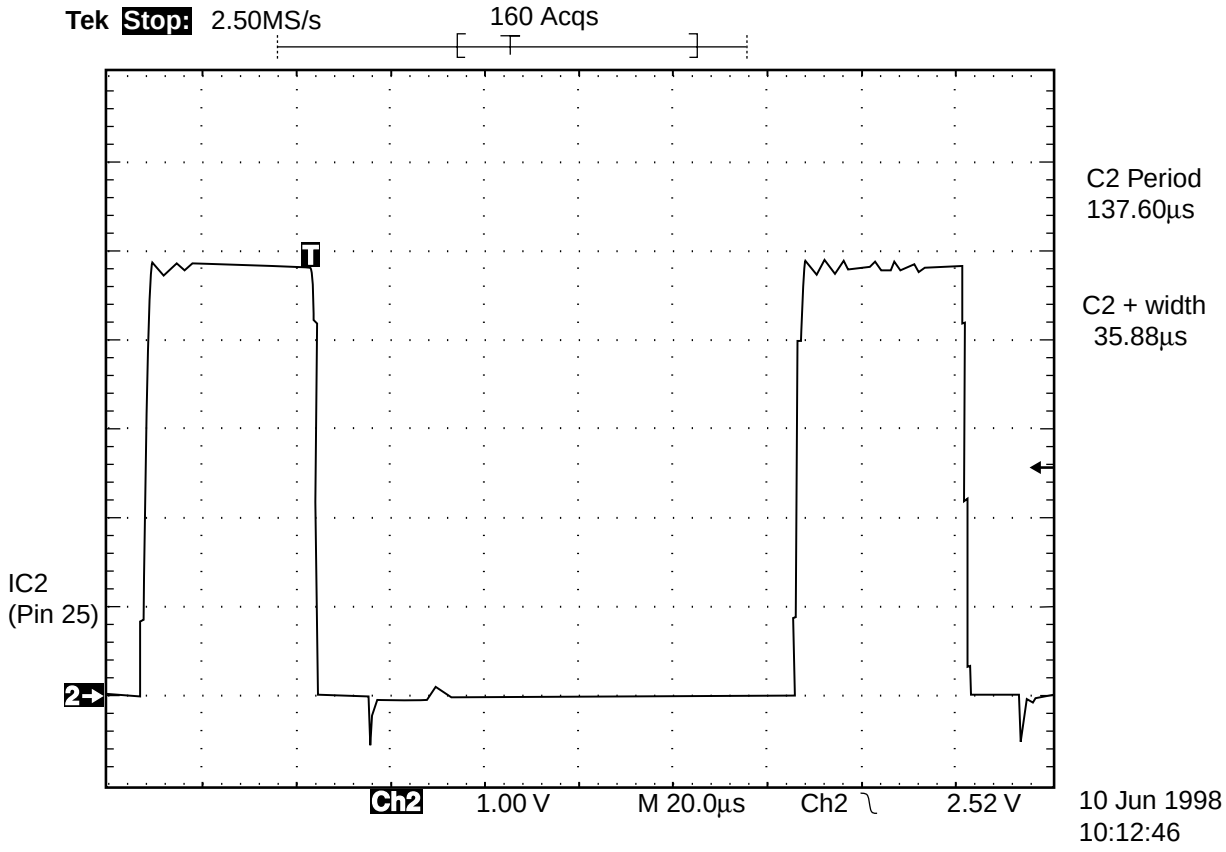



**Figure 6-2**

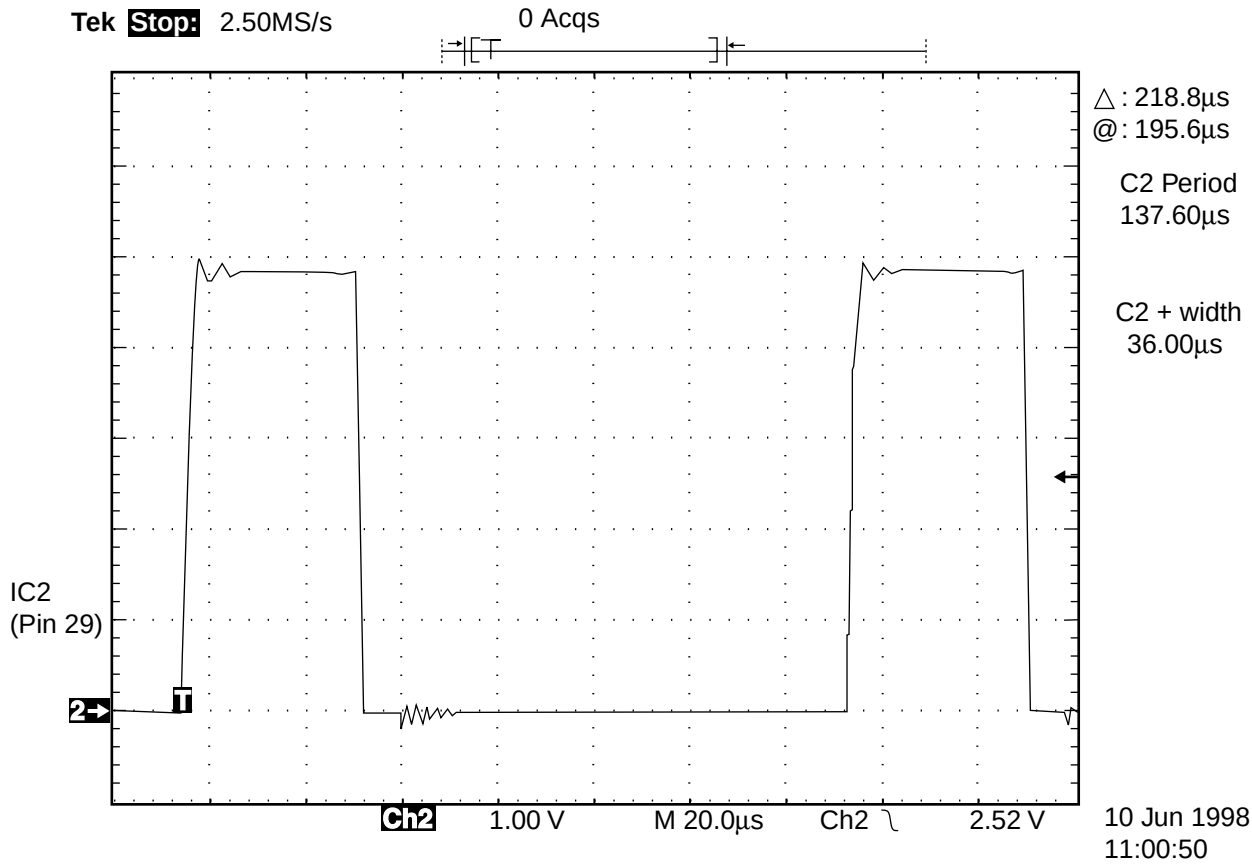



**Figure 6-3**

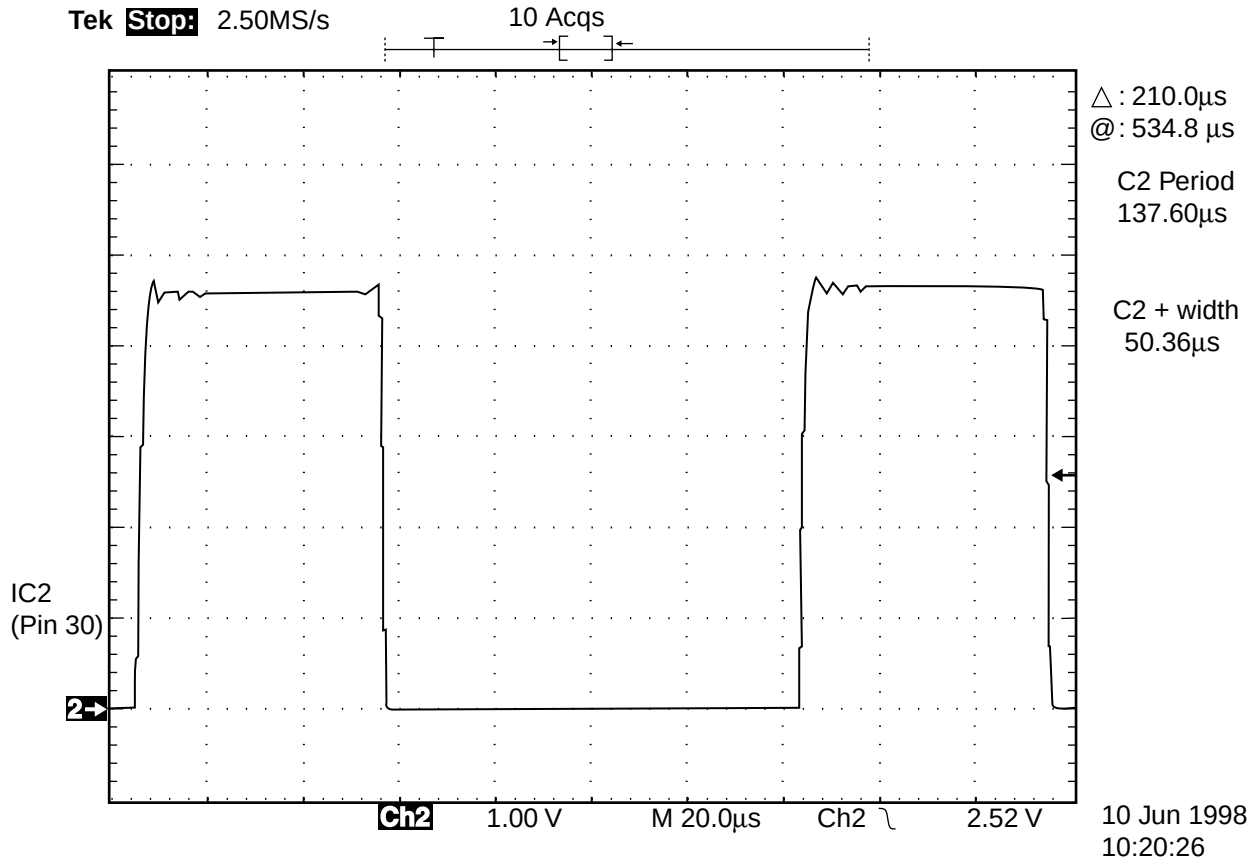



**Figure 6-4**

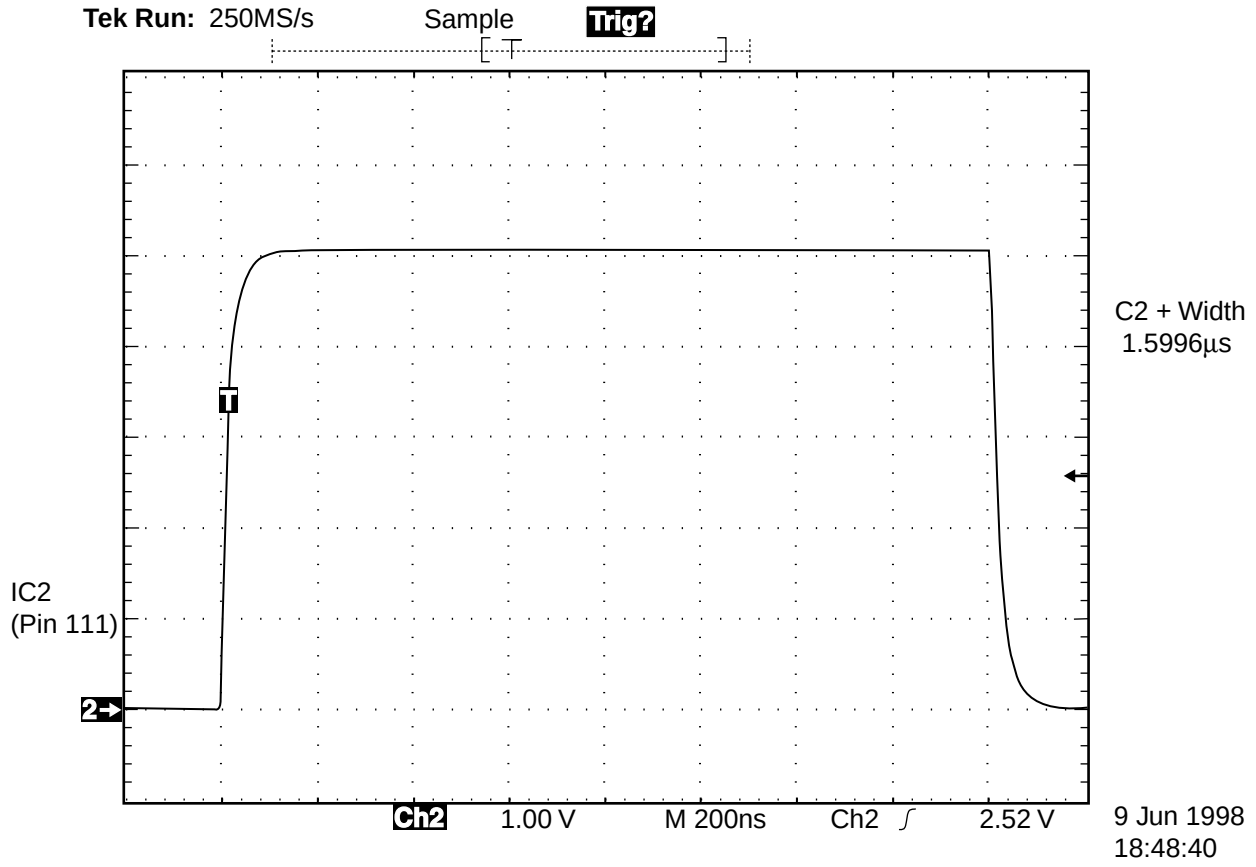



**Figure 6-5**

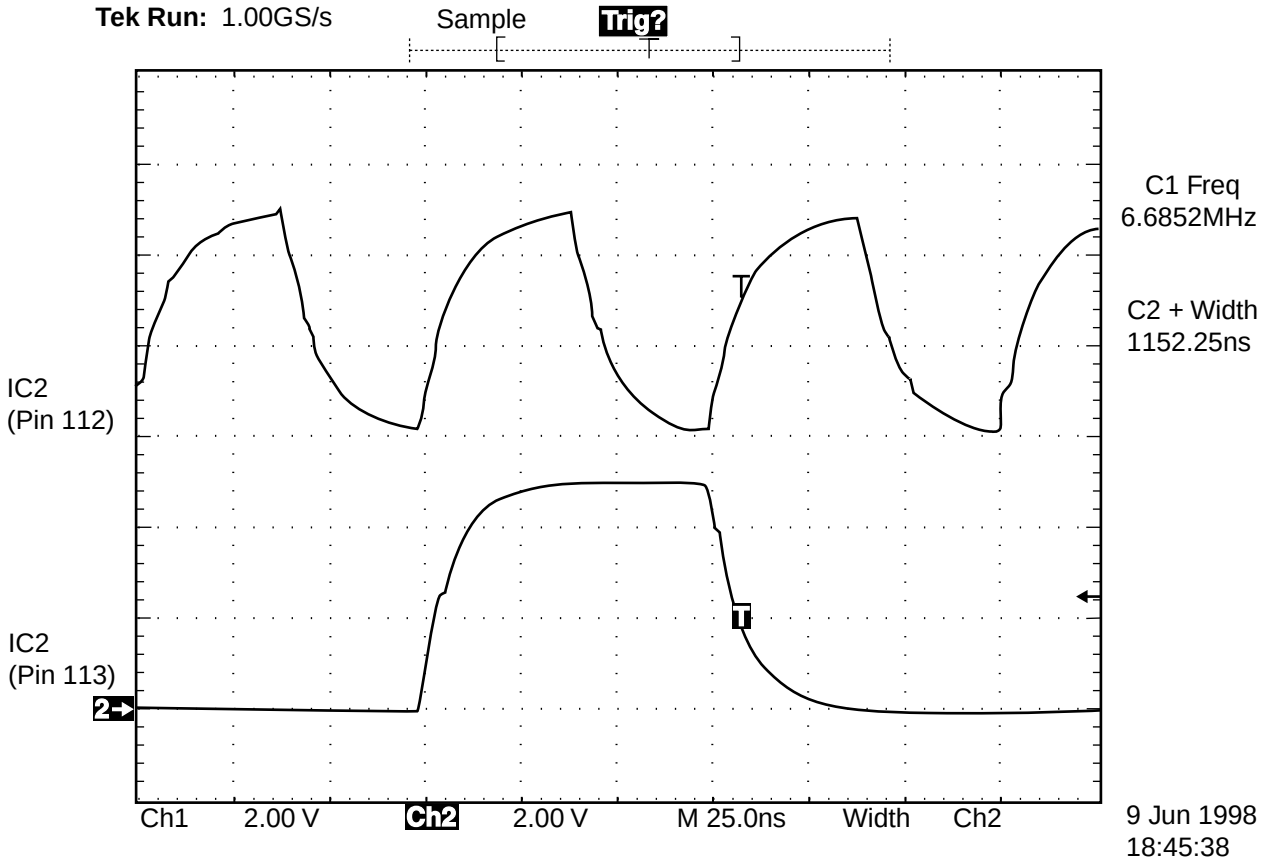



**Figure 6-6**

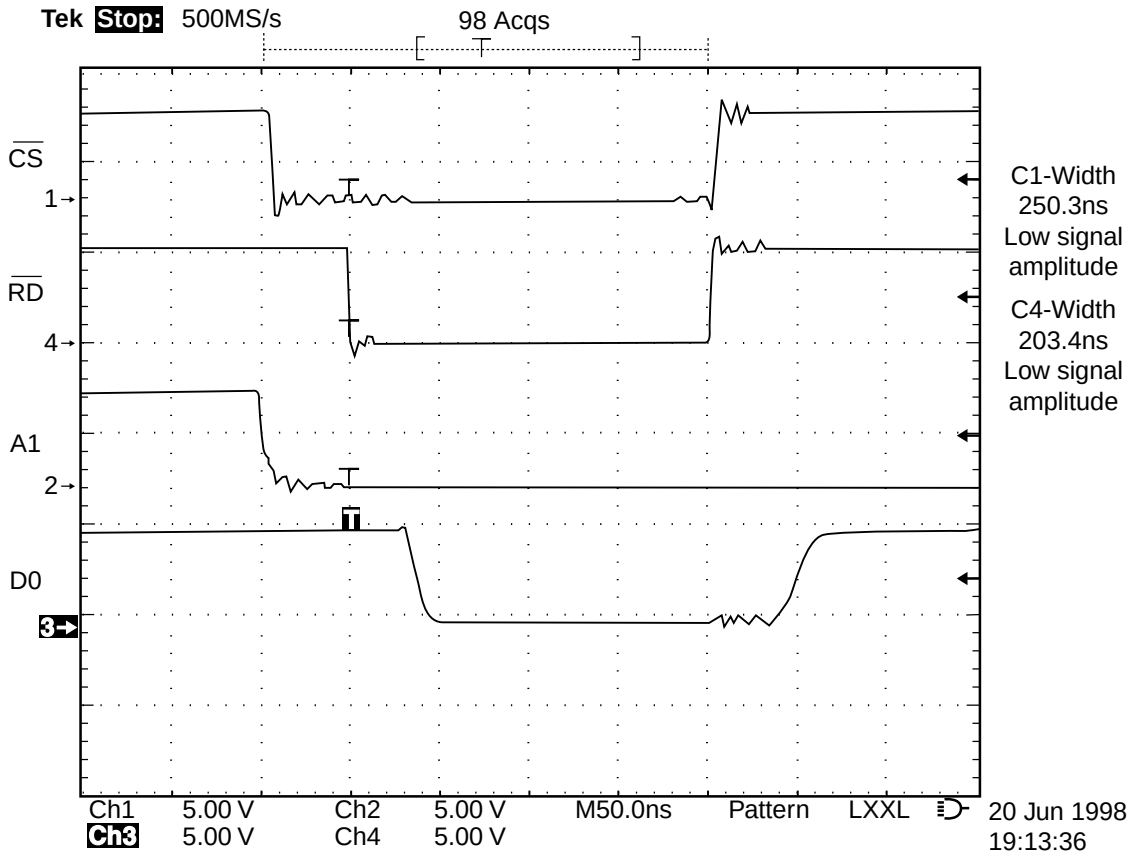



**Figure 9**

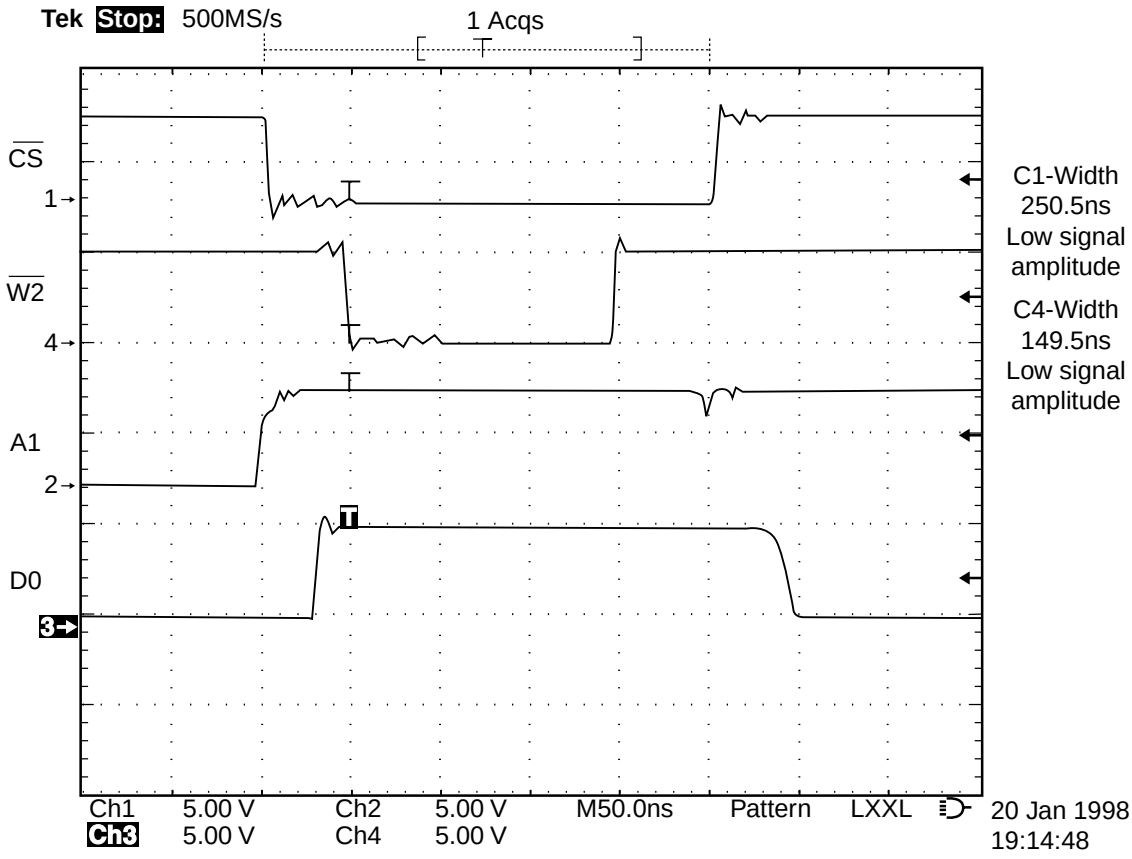



**Figure 9-2**

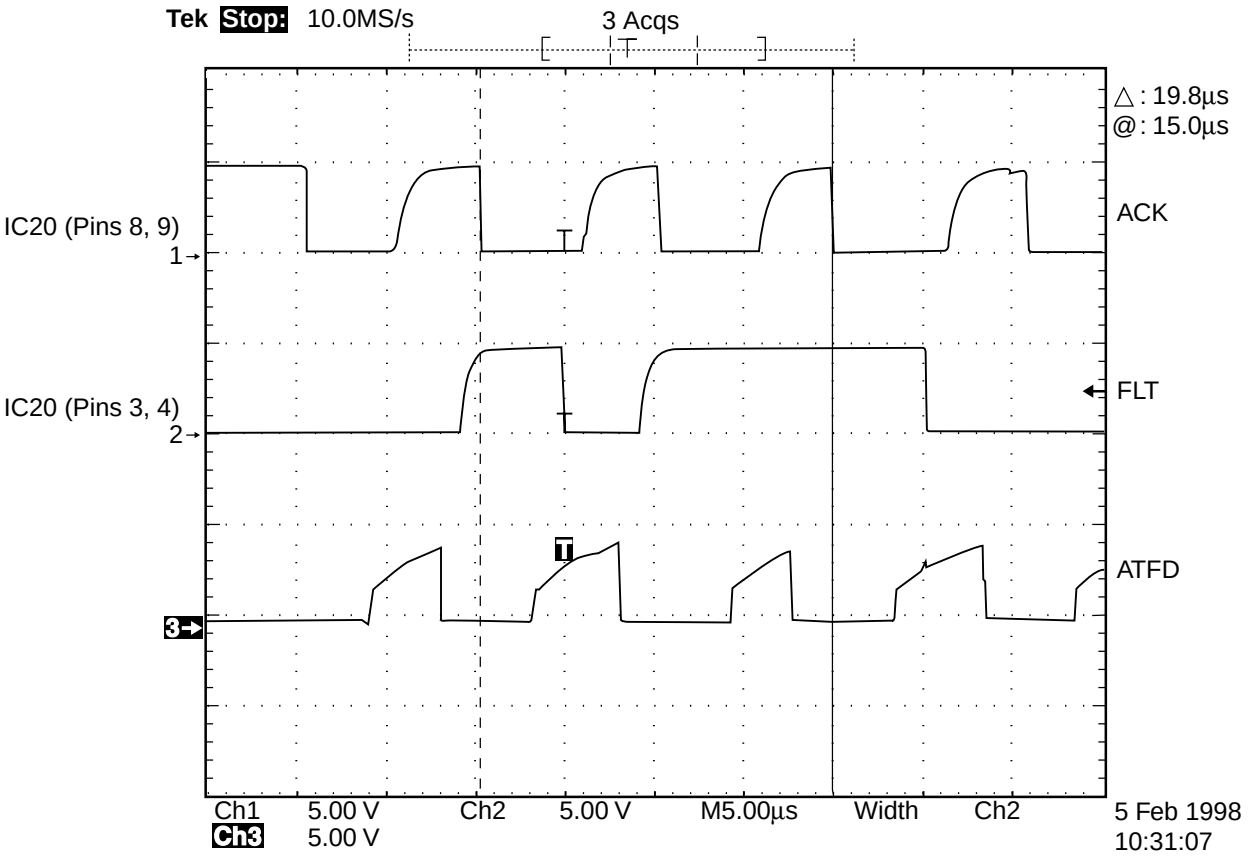



**Figure 11-1**

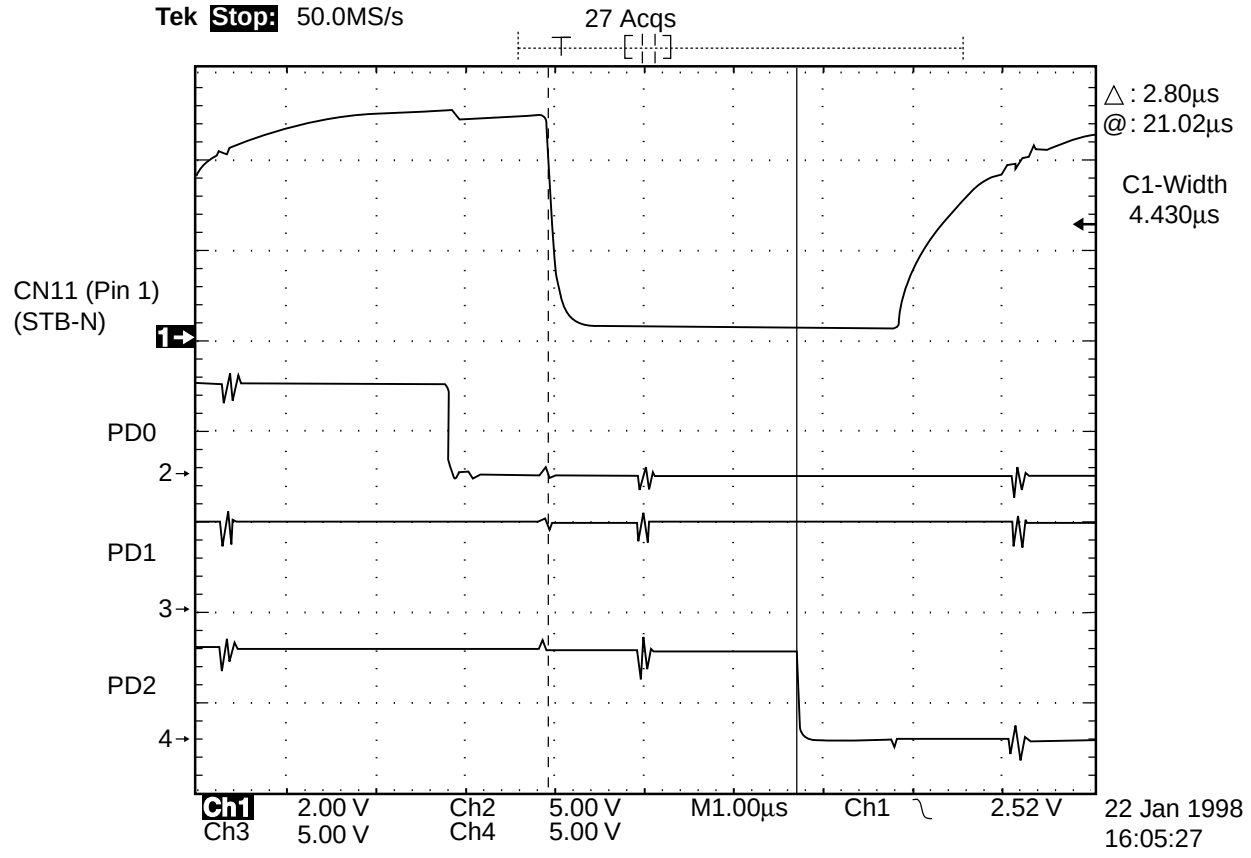



**Figure 11-2**

# Appendix I

# FAX2NET FUNCTION

## First Edition

## October, 1999

## Oki Data Corporation

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## 1. Outline

This specifications describes the addition and modification caused to mount functions using FAX2NET service (that is a facsimile service via internet) in the OKIOFFICE84/OKIFAX 4500.

## 2. FAX2NET Services

### 2.1 Service Types

The FAX2NET service is a facsimile communication service using the FAX2NET-supplied internet. The FAX2NET server distributed in each country transfers facsimile data via the internet. A user facsimile can use internet functions by communicating with the neighboring FAX2NET server.
Of the FAX2NET-supplied functions, the following five functions are mounted in the OKIOFFICE84/OKIFAX 4500.

(1) FAX over IP
Route: FAX(A) -> FAX2NET server (P) -> FAX2NET server (Q) -> FAX(B)
A general telephone line is connected between the FAX(A) and server and between the server (Q) and FAX(B). Servers (P) and (Q) are connected via internet.
The FAX(A), that is connected to server (P) via a telephone line, reports information, e.g., remote-subscriber's facsimile number and user account, to the server using DTMF tone. The FAX(A) then sends facsimile data using a normal T.30 protocol. Server (P) searches for a server (server (Q)) nearest the received remote-subscriber's facsimile number (FAX(B)) and sends facsimile data via internet. Server (P) that received facsimile data sends it to the FAX(B) through a telephone line. Communication between server (Q) and FAX(B) is performed by normal facsimile sending.

(2) FAX to E-mail
Route: FAX(A) -> FAX2NET server(P) -> Internet mail server (Q) -> PC(B)
A general telephone line is connected between the FAX(A) and server (P) and between the server (Q) and FAX(B). Servers (P) and (Q) are connected via internet.
The FAX(A), that is connected to server (P) via a telephone line, reports information, e.g., remote-E-mail address and user account, to the server using DTMF tone. The FAX(A) then sends facsimile data using a normal T.30 protocol. Server (P) searches for a server (server (Q)) nearest the received remote-E-mail address (PC(B)) and sends facsimile data via internet. Server (P) that received facsimile data sends an E-mail to the remote address as an attached file of the mail. The PC(B) receives the E-mail attached to the facsimile data via mail server (Q).

(3) Virtual E-mail
Route: PC(A) -> FAX2NET server (P) -> FAX(B)
The FAX(B) is allocated to a virtual E-mail address by the FAX2NET server. An E-mail issued from the PC(A) is converted to facsimile data by the FAX2NET server (P). The FAX2NET server (P) then sends the facsimile data to the FAX(B) using the T.30 protocol.

The FAX(B) only performs the normal G3 facsimile receiving operation; so, the user need not prepare a special protocol.

(4) Web retrieval

Request route: FAX(A) -> FAX2NET server (P)
Receiving route: Web server (W) -> FAX2NET server (P) -> FAX(A)
Web server (W) and server (P) are connected via internet. The FAX(A) and server (P), and the server (P) and FAX(A) are connected through a general telephone line.
The FAX(A) reports a Web URL to be fetched to server (P) and disconnects the line once.
FAX2NET server (P) converts a specified Web page to facsimile data, issues a call to the FAX(A), and sends the data to the FAX(A) with the T.30 protocol.
A special protocol is not used in a Web page receiving route. This is a normal G3 facsimile reception for the FAX(A).

(5) Payment Card Registration

Request route: FAX(A) -> FAX2NET server (P)
FAX(A) reports the payment card number to the FAX2NET server (P) using DTMF tone.
Continuosly, FAX2NET server sends the registered result image report to the FAX(P) as the facsimile image data by the normal T.30 protocol.

## 3. Setup Items

### 3.1 Registration information

The following items are added to the already registered items.

#### 3.1.1 Facsimile Network Registration

(1) FAX2NET server telephone number

Telephone number of the FAX2NET server to be used. Max. 32 digits. At setting of PBX, this number must be registered, including DIAL PREFIX for PBX-> PTT switching.

(2) Account number

ID particular to a terminal registered in the FAX2NET service. The user must fetch this number individually from FAX2NET.
Account Number (10-digit maximum) + PIN Number (4-digit maximum)

(3) International telephone prefix

Number required to decide whether the FAX2NET service should be started. When the prefix of the destination telephone number matches a registered number, a call is issued to the FAX2NET server. If DIAL PREFIX is specified for the PBX, a number following a dial prefix (and hyphen, blank or pause) is compared with the international telephone prefix.
Max. 10 digits

When an E-mail address/Web URL is included in a communication destination not communicated, the server telephone number and account number cannot be deleted. (Illegal operation)
If either the server telephone number or account number is deleted, another one is also deleted.

## 3.2 Destination Registration

### 3.2.1 E-mail Address Registration

An E-mail address can be registered in up to 10 portions fitting to on-touch keys 1 to 10.
Each address must be composed of up to 64 characters: uppercase letters, lowercase letters, digits, and symbols. For details on the applicable characters, see Section 5.4.
The user can begin E-mail address registration by selecting E-mail registration in the one-touch destination registration. For details on operation, see Operations.
Whether an entered character string is appropriate is not checked.
Each E-mail address is internally stored in a separate area from a general one-touch registration telephone number storage area.
When an E-mail address is registered, the one-touch parameter is initialized.

### 3.2.2 WEB URL Registration

WEB URL can be registered in 10 portions fitting to one-touch keys 1 to 10.
Each address must be composed of up to 64 characters: uppercase letters, lowercase letters, digits, and symbols. For details on the applicable characters, see Section 5.4.
The user can begin URL registration by selecting URL registration in destination registration.
In this case, the user need not prefix http://.
For details, see Operations.
Whether an entered character string is appropriate for Web URL is not checked.
When Web URL is registered, the one-touch parameter is initialized.

### 3.2.3 Group registration

To register a group destination, an abbreviated dial can be mixed with O.T. in which an E-mail address is registered and one in which other general telephone number is registered.
However, a group destination cannot be registered, including an O.T. key in which Web URL is registered. If an attempt is made to add Web URL to a group, message “NOT PROGRAMMED” appears.
When an account number is not registered, O.T. in which an E-mail address is registered cannot be specified for group destination.
When an account number is not registered, if a group including an E-mail address in a group is selected as a destination, the E-mail address is deleted from the group registration. When no group destination remains as a result of the deletion, if the group is specified at selection of a communication destination, message “NOT PROGRAMMED” appears.

## 3.3 Menus

For details on the menus, see Operations.

### 3.3.1 User Program

Add item “FAX2NET Server Registration” to No. 8.
Under “FAX2NET server registration,” specify a FAX2NET server telephone number, FAX2NET account number, and international telephone prefix.

### 3.3.2 Location Program

When “registration in one-touch key” is selected, if an account number is already registered, branches appear so that the user can select whether a telephone number E-mail address or Web URL is to be registered.
If telephone number registration is selected, the screen changes to the conventional one-touch key registration screen.
If E-mail address or Web URL registration is selected, the screen changes to a new E-mail address registration or Web URL registration screens.
After an E-mail address or Web URL is registered, if an account number is deleted, the user can select only the telephone number registration screen for one-touch registration. In this case, the E-mail address or Web URL is stored internally. If an account number is registered again, the stored E-mail address or Web URL becomes valid.
While no account number is registered, if a new telephone number is registered, the E-mail address or Web URL is deleted.
When both a telephone number and E-mail address or Web URL are registered in one O.T. using RMCS (an account number is already registered), the E-mail address or Web URL has priority.

## 3.4 Characters Allocated to UNIQUE Keys

The following five kinds of special characters are newly assigned to UNIQUE keys to help the user enter an E-mail address and Web URL:

At mark : @
Under score : _
Tilde : ~ (Since this system does not support “~,” “$^{-1}$” is displayed on the LCD instead.)
Back slash : \
Percent: :%
Double quotation: ”

## 3.5 Characters Allocated to One-Touch Keys

The following characters can be used on each character entry screen by allocating them to one-touch keys 1 to 6. The CAPS function is allocated to one-touch key 7; so, it is valid at entry of an E-mail address and Web URL. See Fig.3 OKIOFFICE84/OKIFAX 4500 control panel.

| | | |
|---|---|---|
| O.T. No.1 | : . | |
| O.T. No.2 | : _ | (Since this system does not support "~," "$^{-1}$" is dis- |
| O.T. No.3 | : ~ | played on the LCD instead.) |
| O.T. No.4 | : ” | |
| O.T. No.5 | : / | |
| O.T. No.6 | : @ | |
| O.T. No.7 | : CAPS | |

## 3.6 Entering Lowercase Letters

Lowercase letters can be entered on the Web address and E-mail address entry screens. CAPS ON <=> CAPS OFF toggle switching is enabled by pressing O.T. 7. The default is CAPS OFF (lowercase letters enabled) is set on the E-mail address entry and Web URL entry screens.

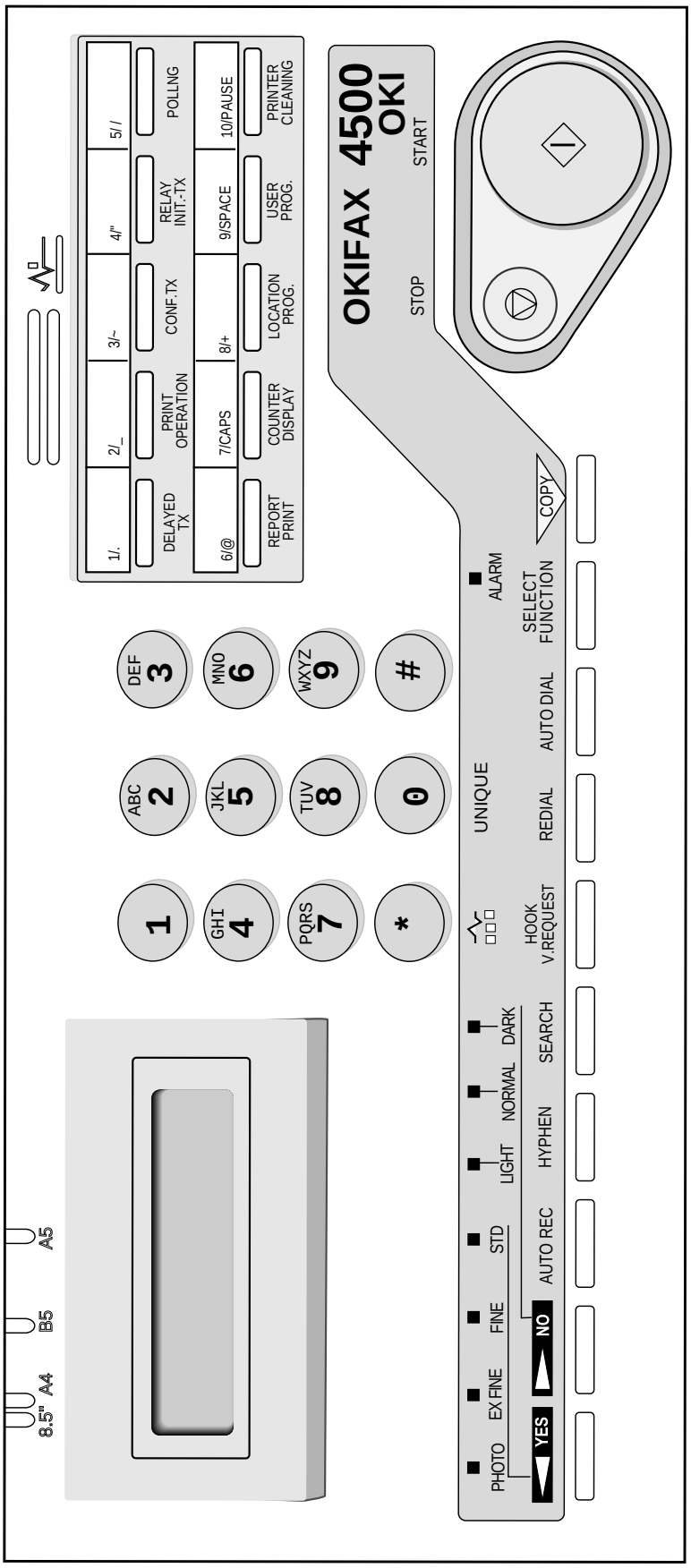



Fig 3 OKIFAX 4500 Control Panel

## 4. Functions

### 4.1 Single Destination Sending

#### 4.1.1 International Call

This function checks a destination telephone number prior to dialing and determines whether the FAX2NET function is to be used.
When the FAX2NET server telephone number, account number, or international telephone prefix is not registered, a call is issued to a destination telephone number as normal G3 facsimile sending.
If a dial prefix is set, it is first compared with the prefix of the destination telephone number. When the dial prefix matches the prefix of the destination telephone number, a part excluding the dial prefix and subsequent hyphen, blank, or pause from the destination telephone number is compared with an international telephone prefix.
When an international prefix matches the prefix of a destination telephone number, a call is issued to a number registered as a FAX2NET server telephone number.
The result of communication with the FAX2NET server is described in the Activity report. Whether a target call arrives at the last destination cannot be recognized from OKIOFFICE84/ OKIFAX 4500. The user must confirm the communication result on the FAX2NET Web page.

##### 4.1.1.1 Alarms

When a destination telephone number consists of only a dial prefix and international telephone prefix, a sending destination telephone number is missing. This is assumed to be a calling error with service code 909D without calling operation.
When the FAX2NET server returns no reply or is busy, the fax waits for redialing according to redial setting in the same way as normal sending.
If DTMF tone “D” is sent instead of DTMF tone “B,” information cannot be set in the FAX2NET server. The fax then cuts off the line, displays an alarm message on the LCD, lights on the alarm LED lamp, and sounds alarm. In this case, do not redial because registration information about the FAX2NET server may be incorrect. The service code is 14D0.
When the TA time lapsed after calling to the FAX2NET server was completed, if DTMF tone “A” is not sent from the FAX2NET server, the fax cuts off the line and enters the redial wait state. (Handled as the destination no-reply state.)
When the TB time lapsed after the sending of a sending destination number, etc. ended with a DTMF tone, if DTMF tone “B” or “D” is not returned from the FAX2NET server, the fax cuts off the line and enters the redial wait state. (Handled as the destination no-reply state.)
When the TC time lapsed (T0 timeout set value) after DTMF tone “B” was received, if the T.30 protocol does not begin from the FAX2NET server, the fax cuts off the line and enters the redial wait state. (Handled as T0 timeout.)
When communication terminates abnormally for other reason until the fax enters the T.30 protocol from a response (line pull-out, stop by STOP key, or document pull-out, etc.), the communication is handled like normal one.
After the fax enters the T.30 protocol, if an alarm occurs, the fax performs the same alarm operation as for the normal G3 communication.

### 4.1.2 E-mail Address

When a one-touch key in which an E-mail address is registered is used as a destination, a call is issued to a FAX2NET server telephone number.
If a FAX2NET server telephone number, account number is registered, an E-mail address is not accepted as a destination.
While the fax is in the redial wait or delayed TX wait state, the FAX2NET server registration cannot be deleted. ("ILLEAL OPERATION")
Alarm processing is the same as for international telephone number.
The result of communication with the FAX2NET server is described in the Activity report.
Whether a target mail arrives at the last destination cannot be recognized from the OKIOFFICE84/OKIFAX 4500. The user must therefore confirm the communication result on a FAX2NET Web page.
The head of an E-mail address can be defined up to 20 digits as a destination in the sender ID column. In the same way, the head of an E-mail address can be defined up to 20 digits as a destination to the Activity report.

## 4.2 Broadcasting

### 4.2.1 Destination Specification

As a broadcasting destination, a general destination number can be mixed together with a telephone number or E-mail address including an international telephone prefix. Broadcasting can be specified only with international call or E-mail address.
The method of specifying an E-mail address as a broadcasting destination is the same as of the normal method using the O.T. key.
When information about the FAX2NET server is not registered, no E-mail address can be specified as a broadcasting destination. The broadcasting destination cannot include a one-touch key in which Web URL is registered.

### 4.2.2 Sending Operation

For broadcasting, a call is issued to destinations one by one.
Even if a broadcasting destination includes multiple international telephone numbers and E-mail addresses, a call is issued to FAX2NET server destinations one by one. In this case, multiple destinations cannot be reported to the FAX2NET server.
The communication with the FAX2NET server for each destination is the same as of a single-destination sending.
The OKIOFFICE84/OKIFAX 4500 assumes that the sending to the destination is completed after the sending to the FAX2NET server ends. At printing of a broadcasting end report, therefore, data may not arrive at the remote facsimile.

## 4.3 Web Printing

### 4.3.1 Requests

Web printing begins by selecting a one-touch key in which Web URL is registered as a destination. If information about a Web address or FAX2NET server is not registered, Web retrieval is invalid.
To prepare for Web printing, first convert a character string registered as a Web address according to the conversion table shown in Section 5.4.
When a Web printing request is issued, it is only described in the Activity report without facsimile communication.
For details on the Web address report to the FAX2NET server, see the chapter 7.

#### 4.3.1.1 Alarms

When the FAX2NET server returns no reply or is busy, redial is handled as normal redial.
After the FAX2NET server replies, a communication error due to TA or TB timeout is handled like the single destination sending.
If DTMF tone “D” is returned instead of DTMF tone “B” after a Web address is reported, the system performs the same operation as of the detection of the DTMF tone “D” for single-destination sending.

### 4.3.2 Reception

When fetching a requested home page, the FAX2NET server facsimile-sends its data to the request source. This is performed in normal G3 communication mode.
The maximum time from a Web printing request to an incoming call from the FAX2NET server is not defined. If the FAX2NET server fails the fetch of a requested Web page, it is not reported to the request source facsimile.

## 4.4 Payment Card Registration

If the Payment Card PRG. is selected from User Programming, the screen changes to the Card Number input screen.
Enter the Card Number only with digits (max 16 digits). (However, the number can be entered up to 20 digits.)
A call is issued to the FAX2NET server after the Card Number is entered, and Account ID, "#8930", Card Number and Check sum are sent to the FAX2NET server using DTMF tone.
The fax shifts to the T-30 protocol after receiving the tone "B" from the FAX2NET server, and since the registered result report is sent from the FAX2NET server, the fax message is received by means of the same methods as polling reception. but the Card Number is not preserved.
The Payment Card Number is entered in the Activity Report but Message Confirmation Report is not entered.
If DTMF tone "D" is returned from the EAX2NET server, the fax displays an alarm message.
When the FAX2NET server returns no replay and in case of the interruption of power supply, the fax does not redial.

## 4.5 Non FAX2NET Dialing

In case the user does not desire the facsimile transmission via the FAX2NET server, the user can cancel dialing to the FAX2NET server by specifying "+" prior to dialing of the international telephone prefix.

## 4.6 Confidential and Relay Sending

The FAX2NET function is not used for confidential and relay sending. A call is issued to a general line according to a specified number. An E-mail address cannot be specified for a sending destination.

## 4.7 PBX Setting

(1) When PBX setting is ON and DIAL PREFIX is not set, no call is issued to the FAX2NET server. To use the FAX2NET function at PBX=ON, DIAL PREFIX must be set.

(2) When PBX setting is ON and Flash or Earth is set, if the head is a hyphen, the FAX2NET function is valid regardless of whether DIAL PREFIX is set. (The data succeeding the hyphen is compared with the international telephone prefix.)

## 4.8 Polling Reception

At polling reception, no call is issued to the FAX2NET server.

## 4.9 Other Restrictions

The following restrictions are provided for the FAX2NET function:

(1) PC FAX mode
At sending in PC FAX mode, the FAX2NET function is invalid. Before calling, whether there is an international telephone prefix is not checked.

(2) Destination search function
An E-mail address is not retrieved to search for a destination using the search key.

(3) Telephone number registration application on PC

The application or driver group for MFP function is not changed from OKIOFFICE84/ OKIFAX 4500; therefore, the following item is limited:

The telephone number registration application on PC cannot register an E-mail address in a one-touch key or change the contents for each one-touch key. The column of a one-touch key in which an E-mail address is registered is not registered from the telephone number application on PC.

When an attempt is made to register a new telephone number in a one-touch key in which an E-mail address is already registered on the telephone number application, the telephone number is newly registered, and the E-mail address remains internally.

(4) RMCS

The user cannot reference, enter, or change the FAX2NET server registration function using RMCS.

The user cannot also register an E-mail address in a one-touch key or change the contents of the one-touch key using RMCS. The column of the one-touch key in which an E-mail address is registered is not registered on the RMCS screen.

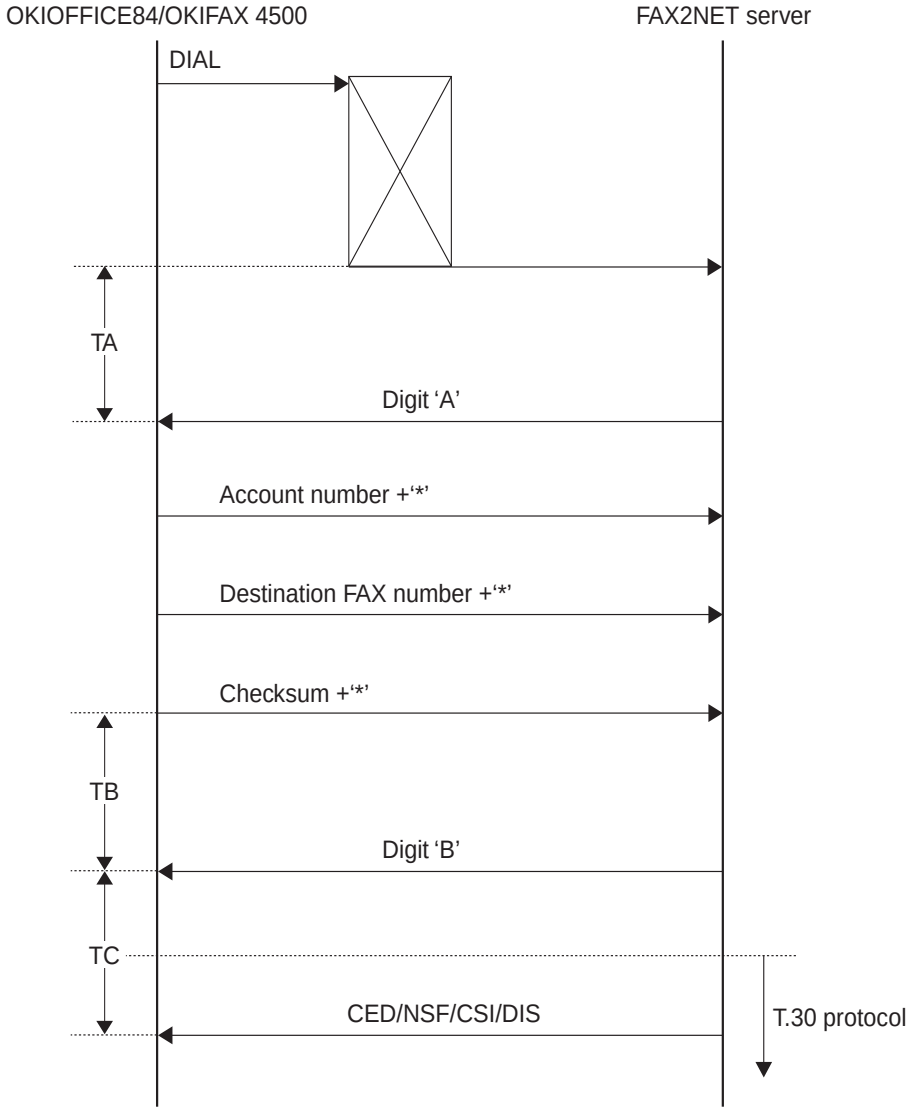
When an attempt is made to register a new telephone number in a one-touch key in which an E-mail address is already registered on RMCS, the telephone number is newly registered, and the E-mail address remains internally.

## 5. Procedure

This section explains a protocol required to report a sending destination or requested Web page address from the OKIOFFICE84/OKIFAX 4500 to the FAX2NET server.

### 5.1 Telephone Number

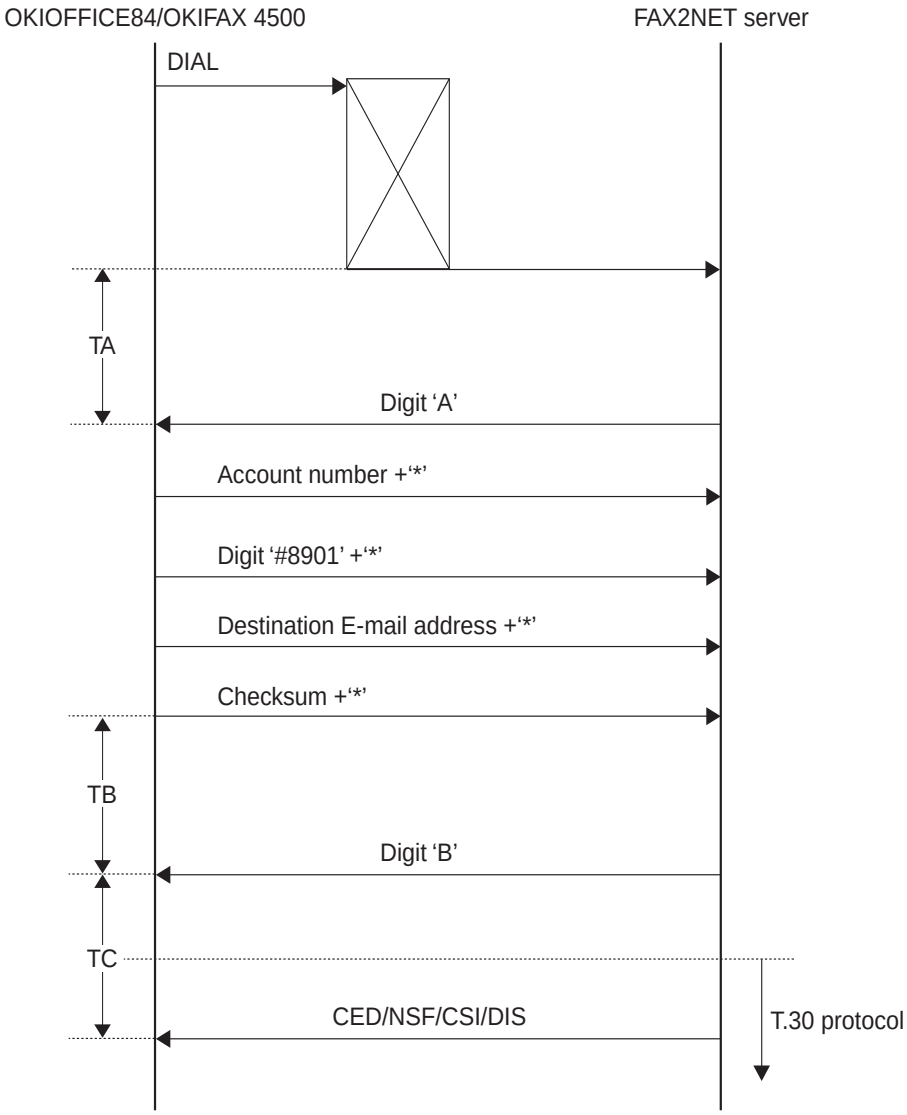
The figure below shows a procedure when the sending destination is a telephone number.
FAX2NET server




- TA < 10 sec.; TB < 6 sec. TC < T0 timer set value. At TA or TB timeout, the service code is 14D0.
- The length of each DTMF tone is 300 ± 25ms. The time between digits is 100ms min. and 5 sec. max.
- The Account number, destination facsimile number, and check sum are delimited by DTMF tone "*."
- For details on check sum, see Section 5.5.
- When the FAX2NET server issues digit "D" instead of digit "B," the request is rejected. In this case, disconnect the line smoothly.
- After digit "B," CNG need not be issued from the facsimile.

## 5.2 E-mail Address

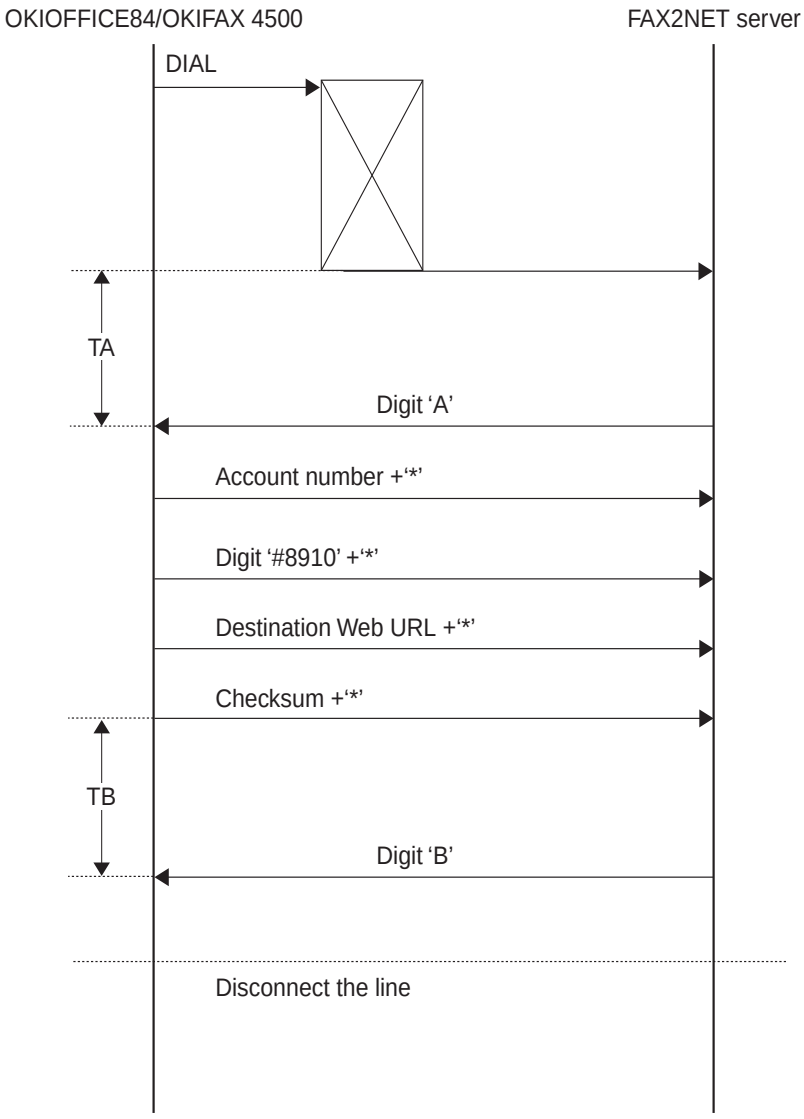
The figure below shows a procedure when the sending destination is an E-mail address.
FAX2NET server




- TA < 10 sec.; TB < 6 sec. TC < T0 timer set value. At TA or TB timeout, the service code is 14D0.
- The length of each DTMF tone is 300 ± 25ms. The time between digits is 100ms min. and 5 sec. max.
- The Account number, destination facsimile number, and check sum are delimited by DTMF tone "*."
- The system adds DTMF tone "#8901" before the E-mail address and assumes that a DTMF tone group succeeding "#8901" is obtained by converting an E-mail address
- For details on check sum, see Section 5.5.
- When the FAX2NET server issues digit "D" instead of digit "B," the request is rejected. In this case, disconnect the line smoothly.
- After digit "B," CNG need not be issued from the facsimile.

## 5.3 Web Address

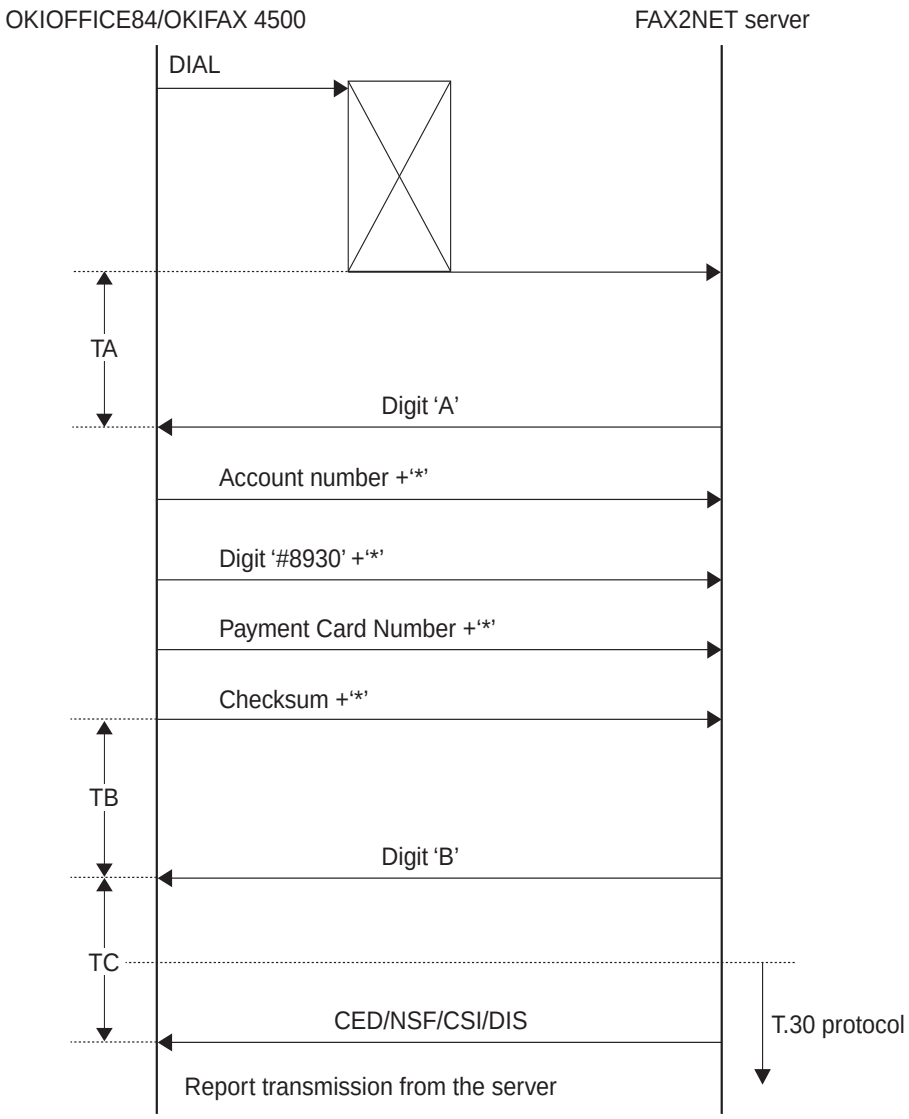
The figure below shows a procedure for requesting a Web page.
FAX2NET server




- TA < 10 sec.; TB < 6 sec. set value. At TA or TB timeout, the service code is 14D0.
- The length of each DTMF tone is 300 ± 25ms. The time between digits is 100ms min. and 5 sec. max.
- The Account number, Web URL, and check sum are delimited by DTMF tone "*."
- The system adds DTMF tone "#8901" before the Web address and assumes that a DTMF tone group succeeding "#8901" is obtained by converting a Web address
- For details on check sum, see Section 5.5.
- When the FAX2NET server issues digit "D" instead of digit "B," the request is rejected. In this case, disconnect the line smoothly.

## 5.4 Payment Card Registration

The figure below shows a procedure for Payment Card Registration.




- TA < 10sec. TB < 6sec. set value. At TA or TB timeout, the server code is 14D0.
- The length of each DTMF tone is 300 ± 25ms. The time between digits is 100ms min. and 5sec. max.
- The Account Number, Card Number, and Check sum are delimited by DTMF tone "*".
- The fax adds DTMF tone "#8930" before the Web address and assumes that DTMF tone group succeeding "#8930" is obtained a Card Number.
- For the detail on Check sum, see Section 5.5.
- When the FAX2NET server issues digit "D" instead of digit "B", the request is rejected, in this case, disconnect the line smoothly.

## 5.5 Character Conversion Table

To report each E-mail address and Web address with a DTMF tone, digits, uppercase letters, lowercase letters, and symbols composing an address must be converted to a character string that can be expressed with DTMF tones. Each character must be expressed with a combination of two or three DTMF tones.
The character conversion table is as follows.

Table 1 DTMF tone conversion table for E-mail and Web addresses

| | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Space | * | 4 | > | H | R | \ | f | p | z |
| 1 | ! | + | 5 | ? | I | S | ] | g | q | { |
| 2 | ” | , | 6 | @ | J | T | ^ | h | r | \| |
| 3 | # | - | 7 | A | K | U | _ | i | s | } |
| 4 | $ | . | 8 | B | L | V | ‘ | j | t | ~ |
| 5 | % | / | 9 | C | M | W | a | k | u | |
| 6 | & | 0 | : | D | N | X | b | l | v | |
| 7 | ’ | 1 | ; | E | O | Y | c | m | w | |
| 8 | ( | 2 | < | F | P | Z | d | n | x | , |
| 9 | ) | 3 | = | G | Q | [ | e | o | y | ƒ |

| | | C10 | C20 | C30 | C40 | C50 | C60 | C70 | C80 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | | È | Ò | Ü | | ð | ú | | |
| 1 | | | É | Ó | | | ñ | û | | |
| 2 | | À | Ê | Ô | | è | ò | ü | | |
| 3 | | Á | Ë | Õ | | é | ó | ý | | |
| 4 | | Â | Ì | Ö | à | ê | ô | | | |
| 5 | | Ã | Í | | á | ë | õ | ÿ | | |
| 6 | | Ä | Î | | â | ì | ö | | | |
| 7 | | Å | Ï | Ù | ã | í | | | | |
| 8 | | | | Ú | ä | î | | | | |
| 9 | | | Ñ | Û | å | ï | ù | | EURO | |

* The hatched letters cannot be entered under the OKIOFFICE84/OKIFAX 4500.
* ß, Æ, Ø, æ, å and ø cannot be entered because they are omitted in this conversion table.

## 5.6 Check Sum

The check sum is obtained by converting the transmitted DTMF tone string (Account No. + Control data field) values to character string according to ASCII code table 1 and adding them.
In this case, the asterisk "*" between the account number and control data field is excluded.

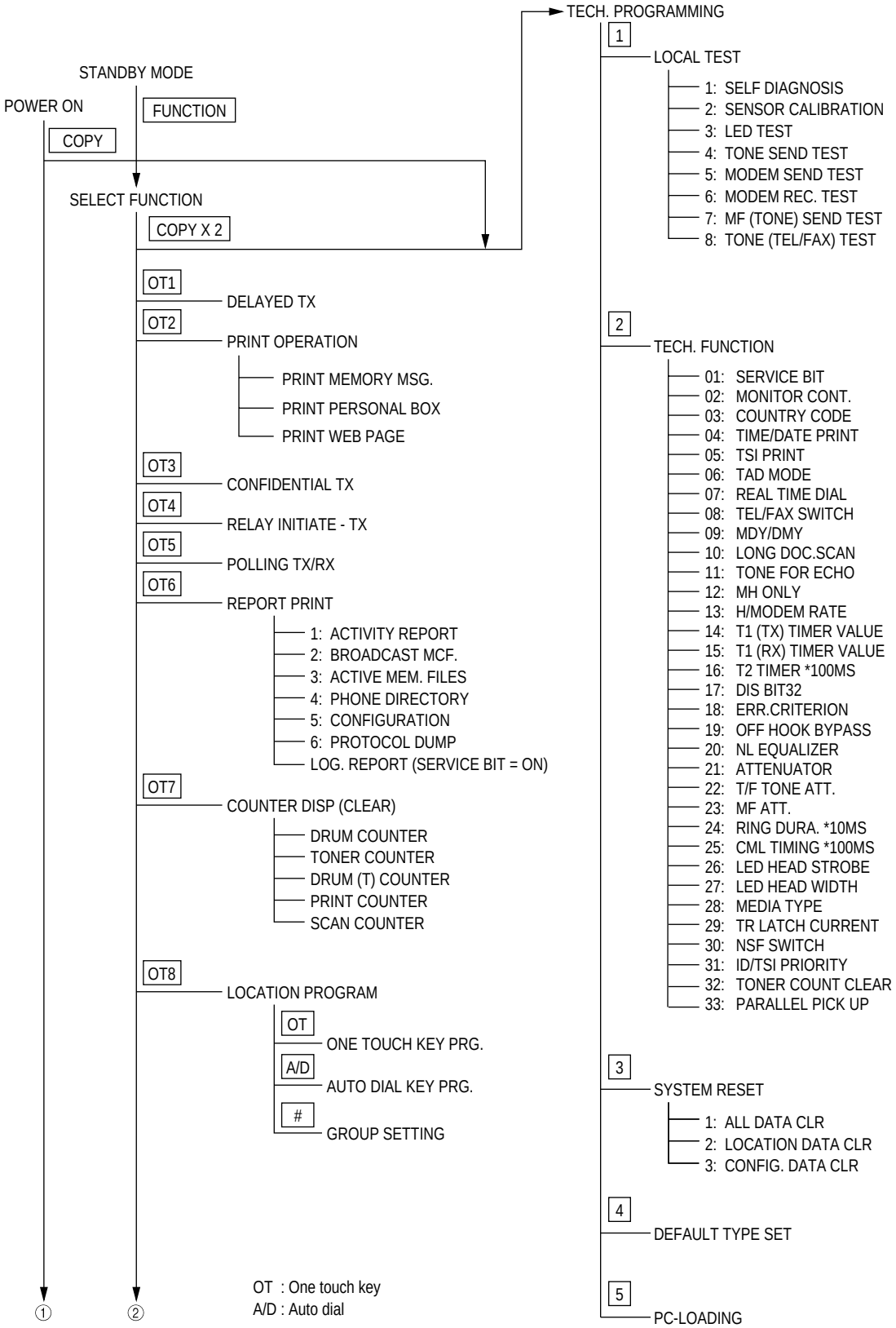
Example:

“12345” + ‘*’ + “#8912” + “C236789” + ‘*’ + Check sum + ‘*’

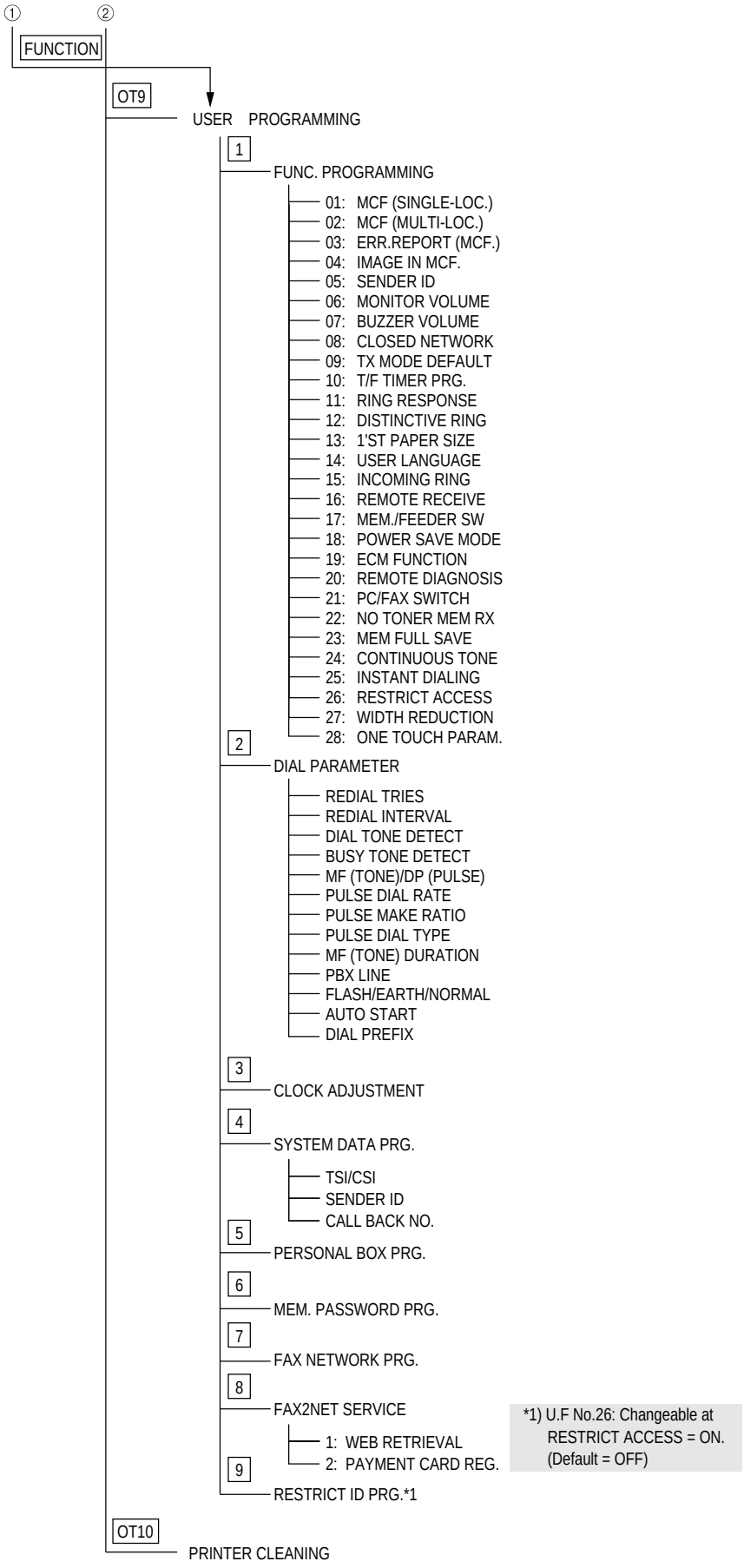
Check sum calculation is as follows:
49 (for 1) + 50 (for 2) + 51 (for 3) + 52 (for 4) + 53 (for 5) +
35 (for #) + 56 (for 8) + 57 (for 9) + 49 (for 1) + 50 (for 2) +
67 (for C) + 50 (for 2) + 51 (for 3) + 54 (for 6) + 55 (for 7) + 56 (for 8) + 57 (for 9)
= 943
“0943” is transmitted as the check sum.

## 6. Operation

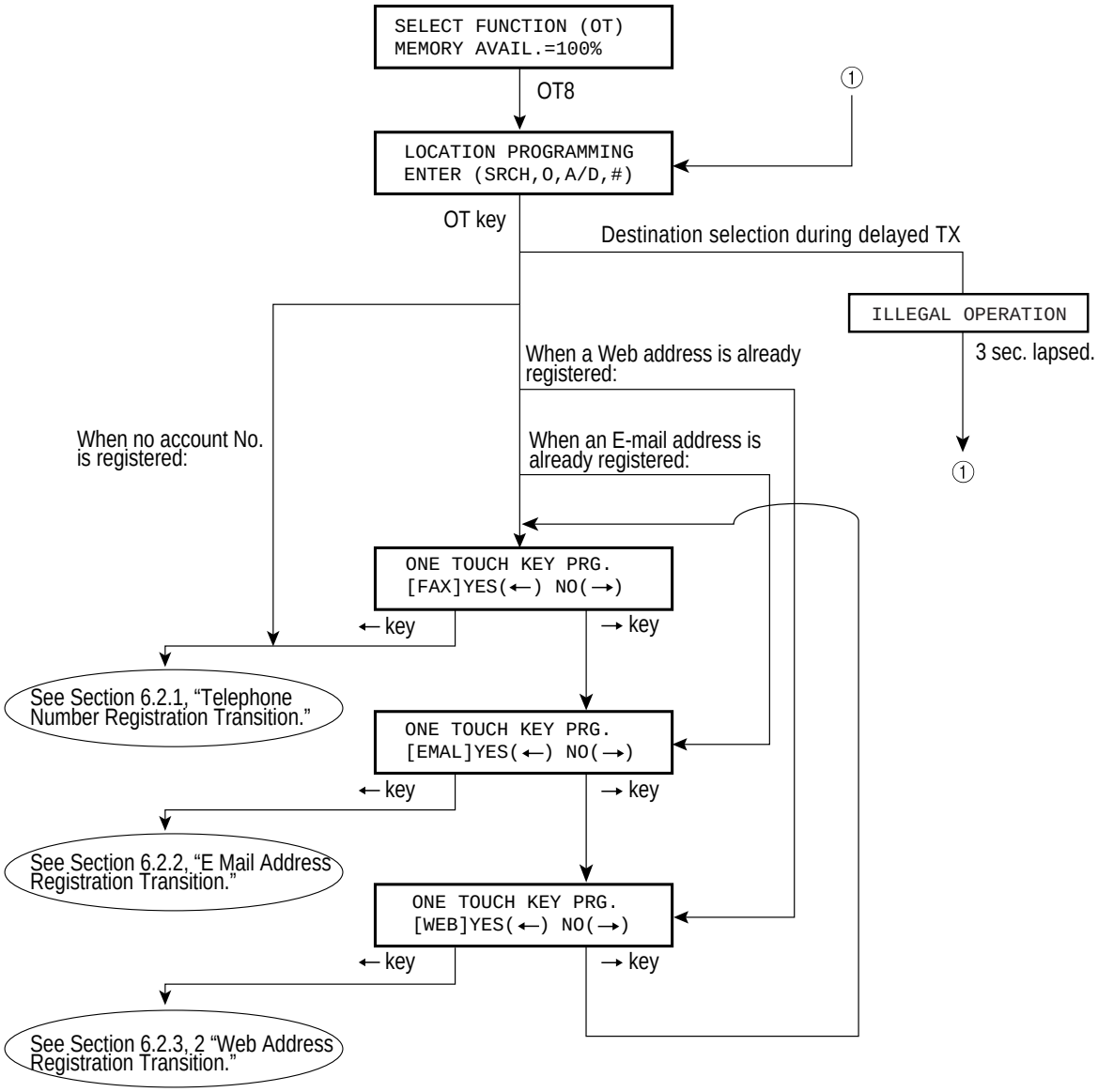
### 6.1 Function Selection Transition (1/2)



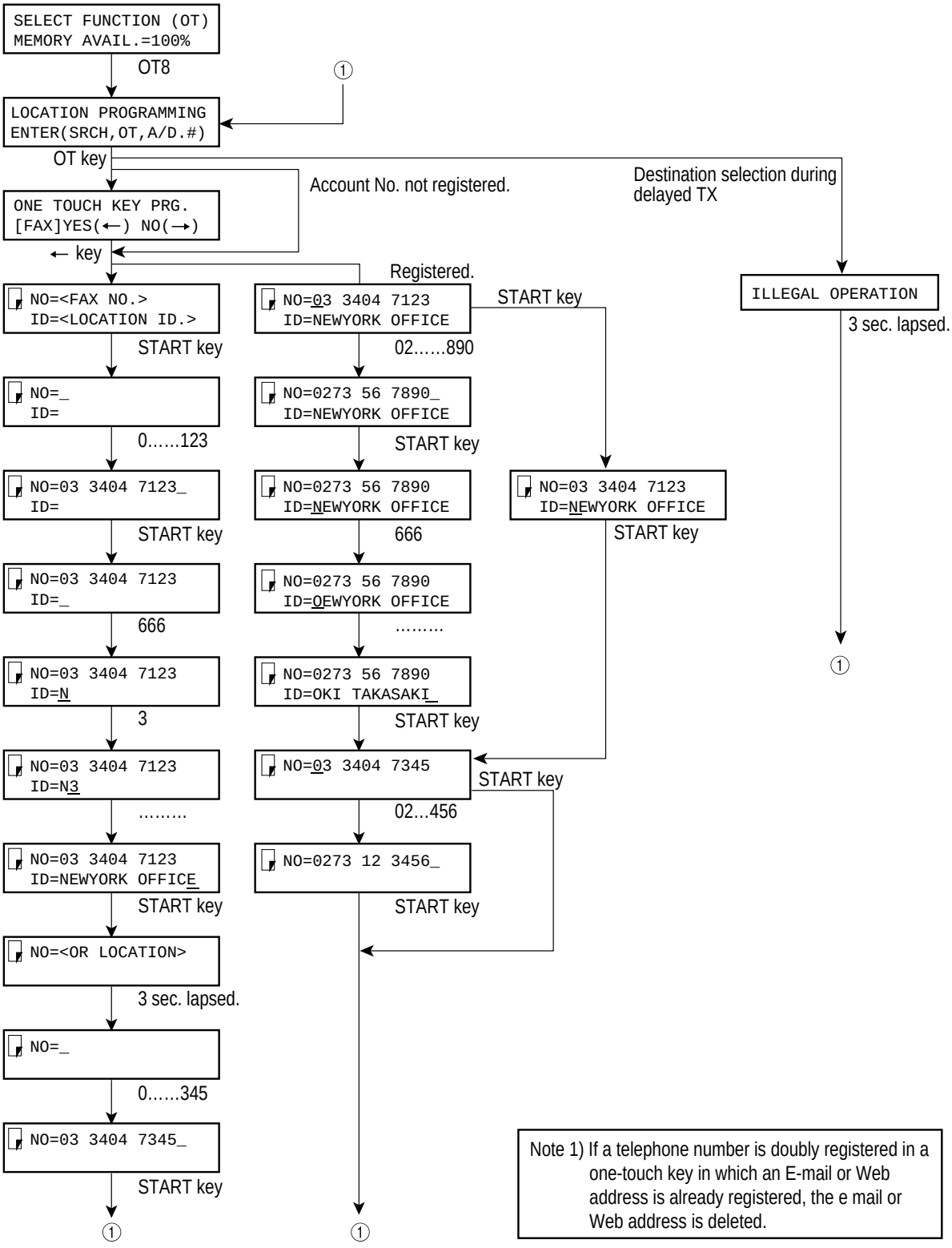
Function Selection Transition (2/2)



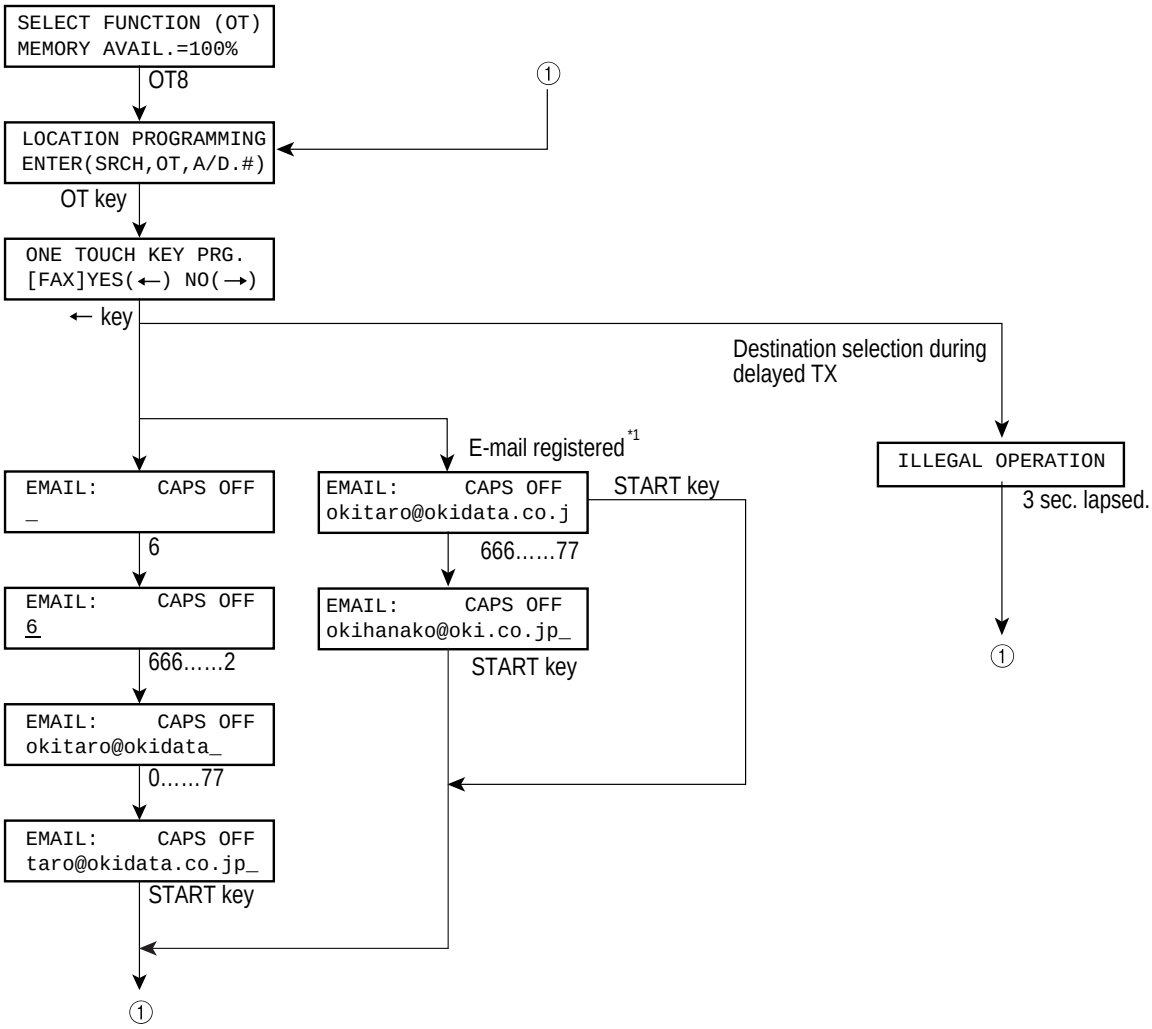
## 6.2 One-Touch Dial Registration Transition



### 6.2.1 Telephone Number Registration Transition



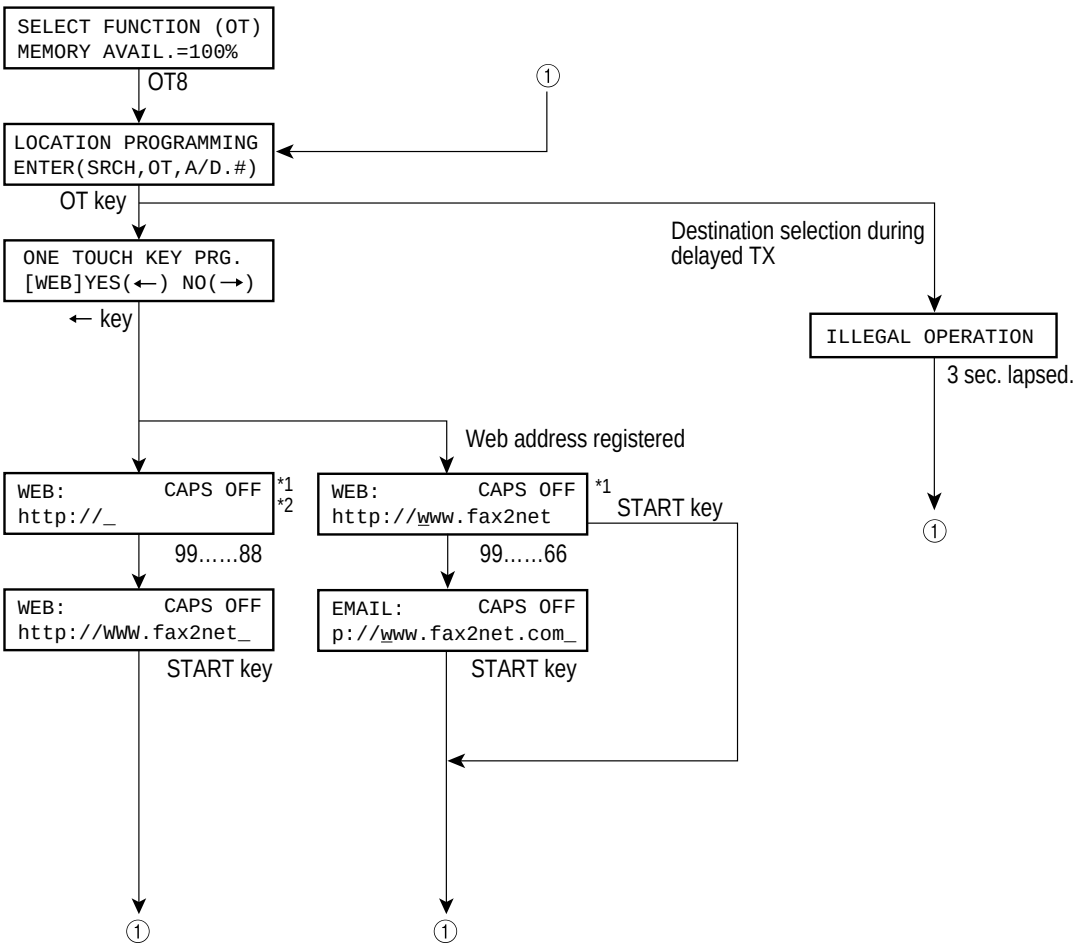
## 6.2.2 E-mail Address Registration Transition




*1) CAPS MODE must be set to OFF at start of registration.

Note 1) If an E-mail is doubly registered in a one-touch key in which a telephone number or Web address is already registered, the telephone number or Web address is deleted.

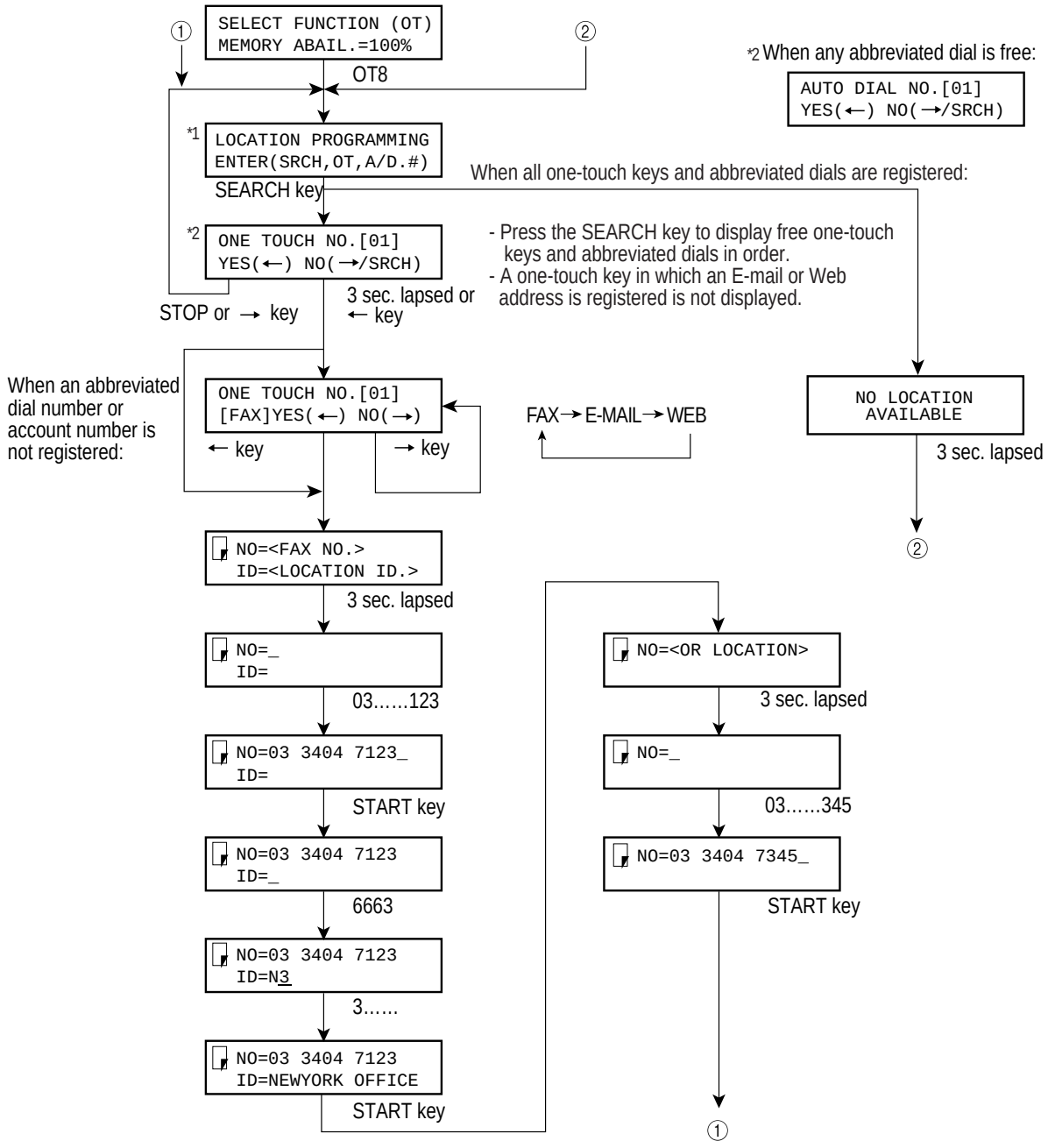
### 6.2.3 Web Address Registration Transition




*1) CAPS MODE must be set to OFF at start of registration.
*2) "http://" cannot be edited. Up to 64 characters can be registered, excluding those characters.
Note 1) If a Web address is doubly registered in a one-touch key in which a telephone number or E-mail address is already registered, the telephone number or E-mail address is deleted.
Note 2) A one-touch key in which only a web address is registered cannot be registered as a group.
Note 3) When a Web address is registered in a one-touch key registered as a group, the one-touch key is deleted from the group destination.

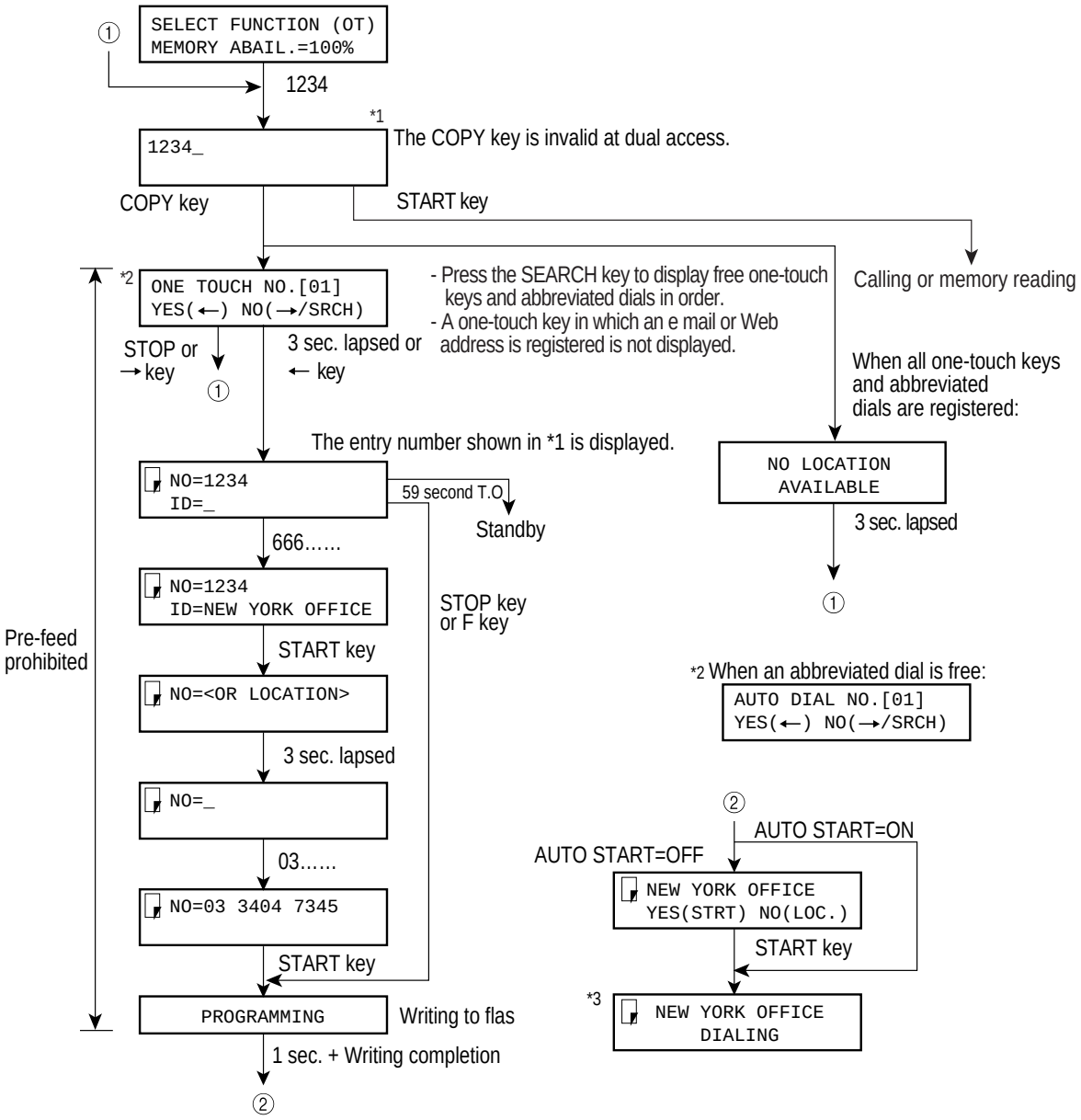
## 6.3. Destination Registration Space Display/Registration Transition

### 6.3.1 One-Touch/Abbreviated Dial Registration Transition




To write to flash, press the STOP or FUNCTION key on the screen shown by *1, or wait until 59-sec. timeout occurs.

6.3.2 Ten Key Stack Calling Transition

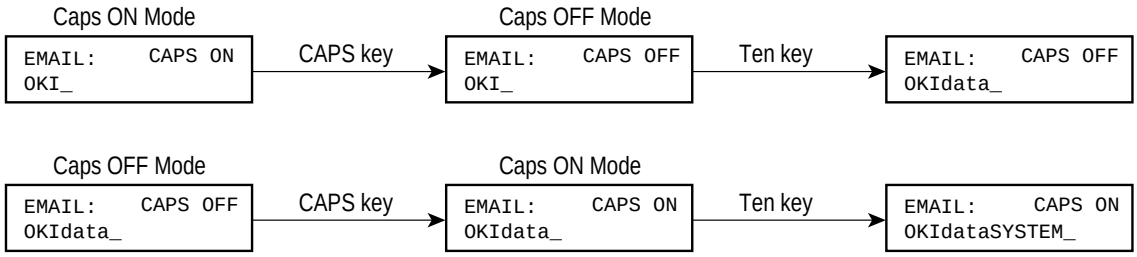



*1) For function communication, the COPY key is invalid. (delayed transmission, broadcasting, confidential, relay, polling reception, etc.)
When the number of entered digits exceeds 32, the COPY key is invalid.

## 6.4 CAPS Key Function

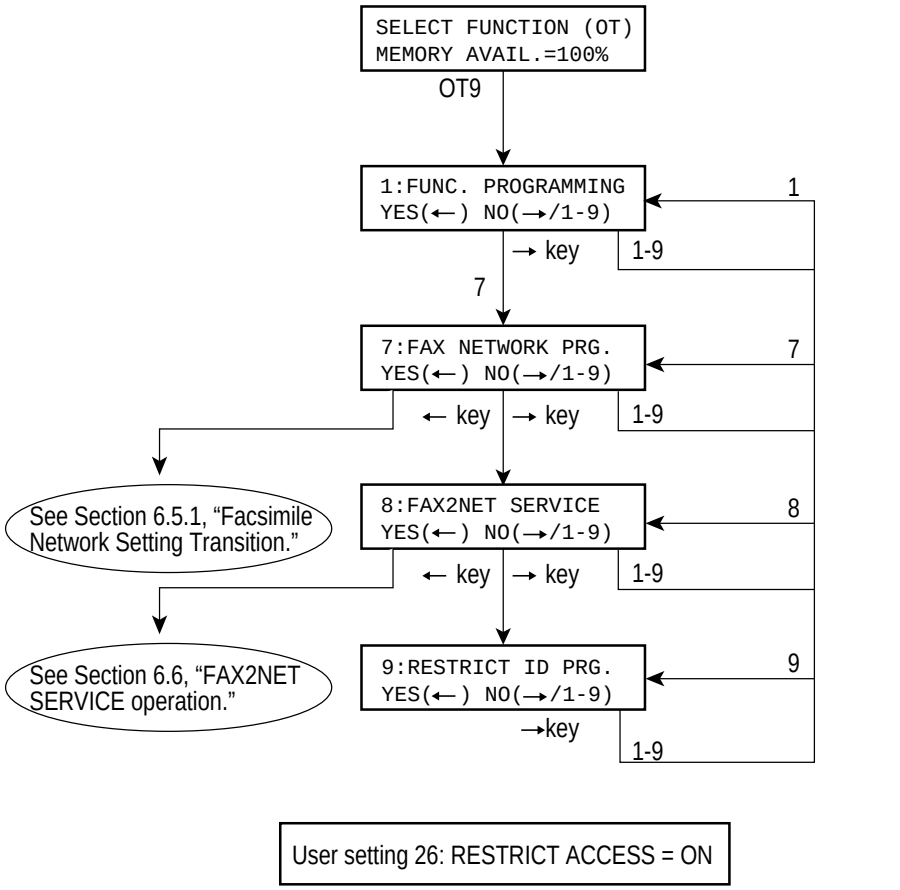
The CAPS key assigns OT7.

E-mail address registration example

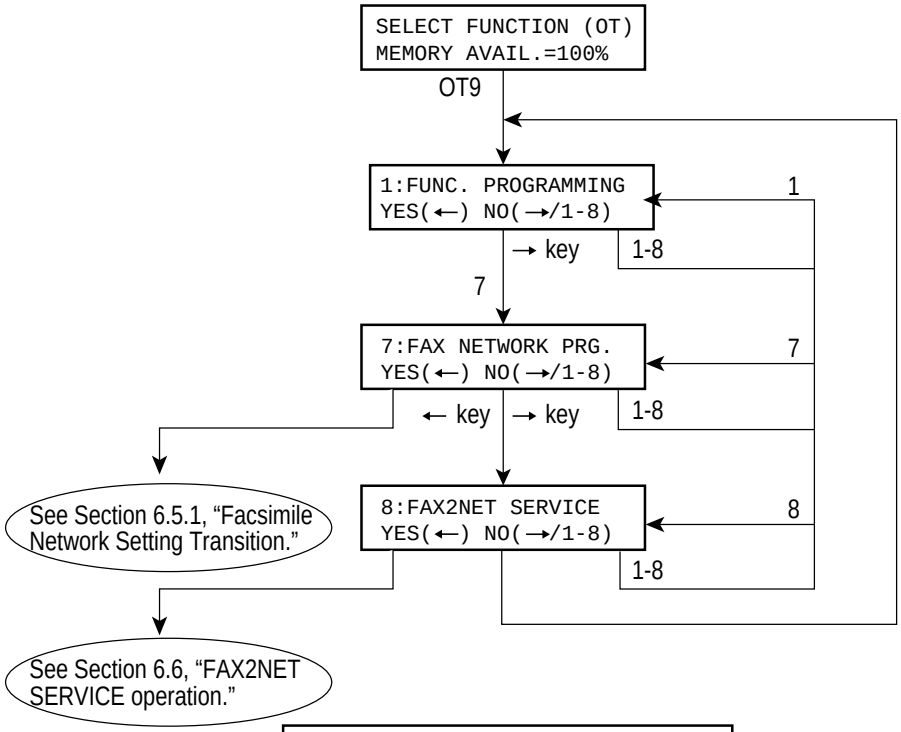



① At entry of an E-mail address or Web address, the uppercase ⇔ lowercase letter entry switching is enabled.
② CAPS can be switched to OFF during CAPS = ON.

6.5. User Setting Transition

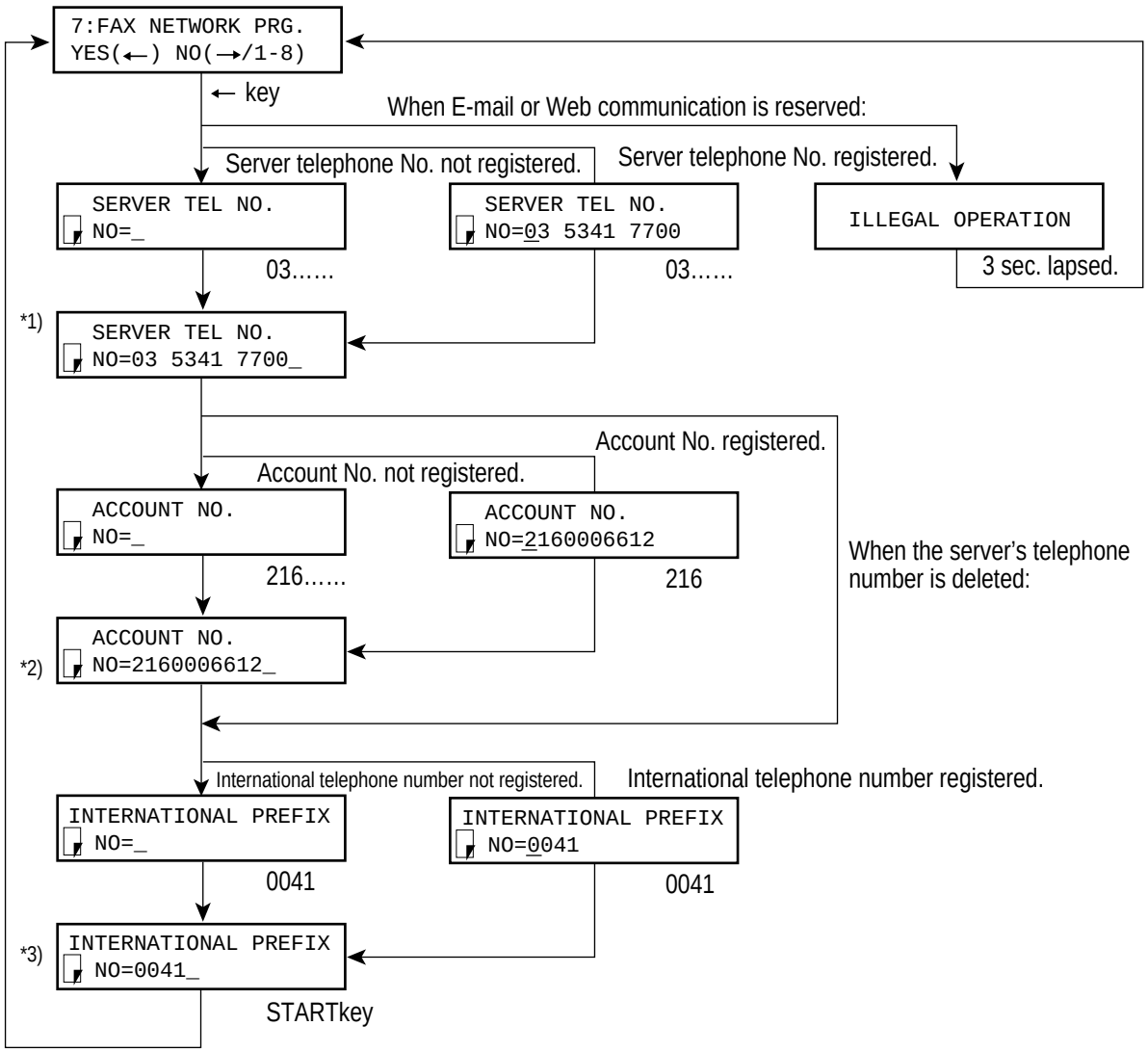



User setting 26: RESTRICT ACCESS = ON



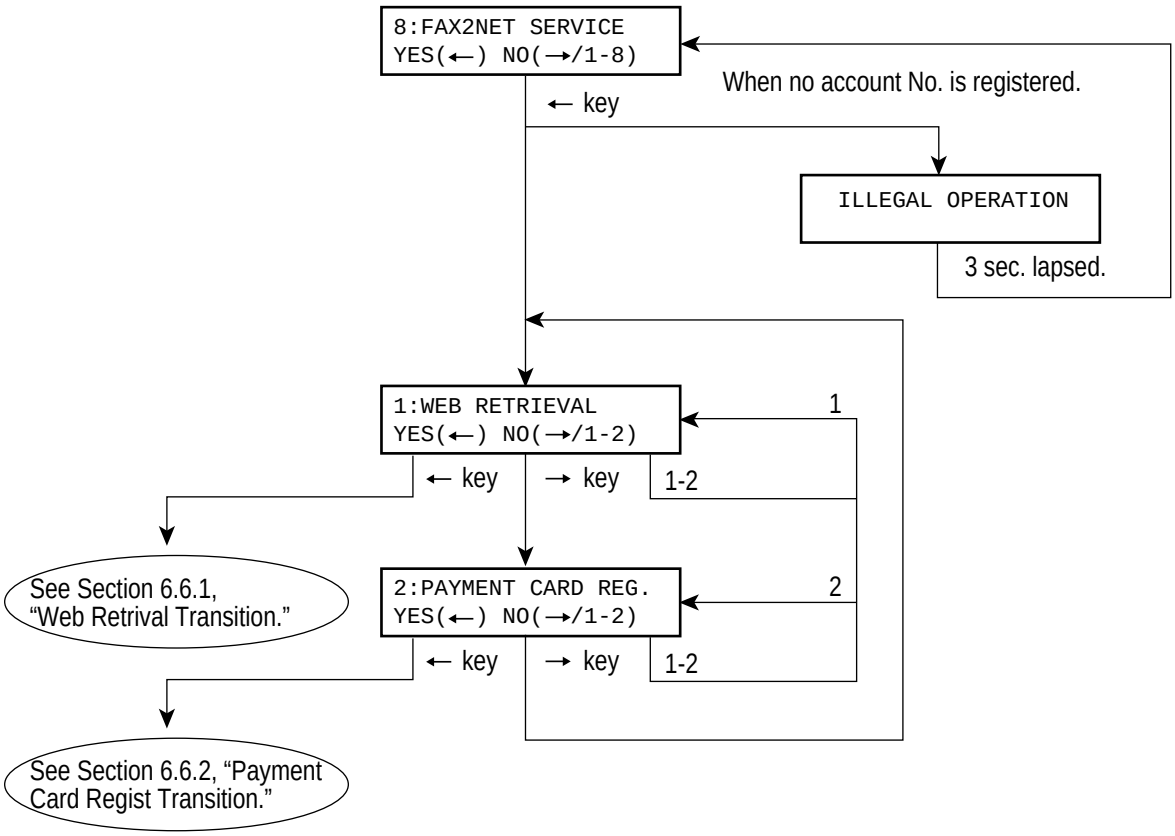

User setting 26: RESTRICT ACCESS = OFF

6.5.1 Facsimile Network Setting Transition

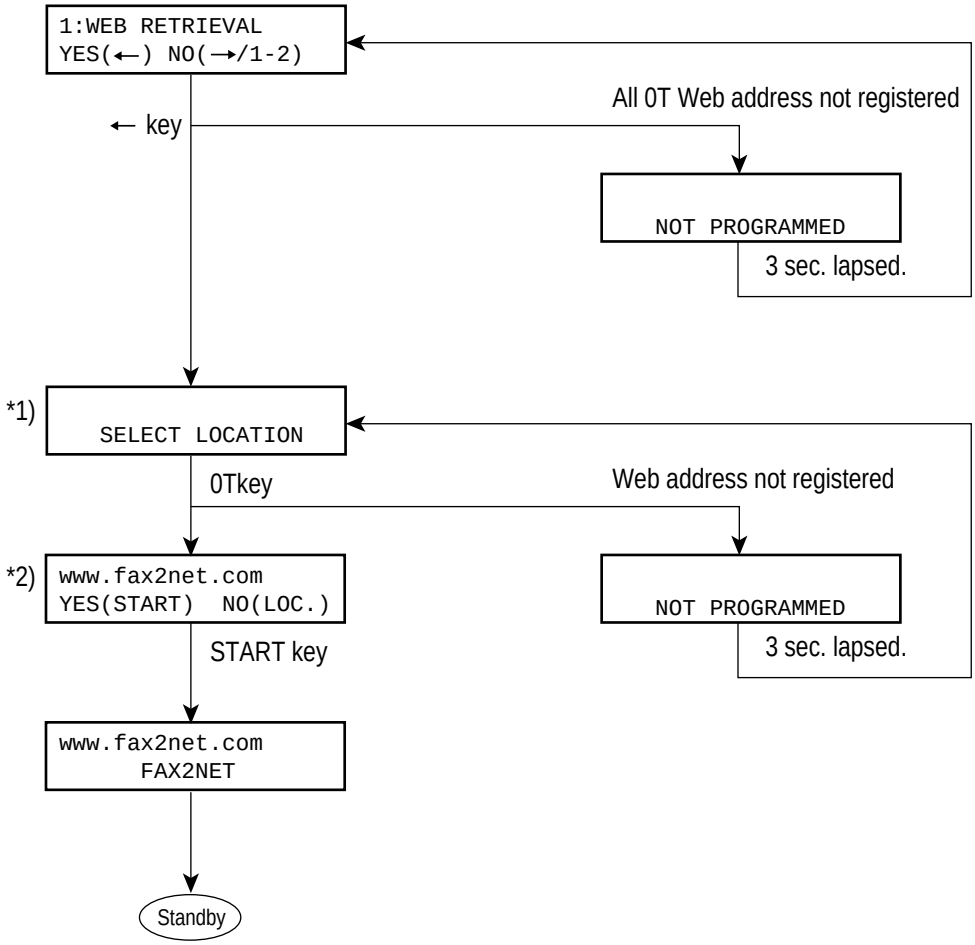



*1) Press the space key to delete the character and press the START key; the account number is deleted.
*2) Press the space key to delete the character and press the START key; the server's telephone number is deleted. The server's telephone number and account number are set by pressing the START key. (The server's telephone and account numbers must be registered.)
*3) Press the START key to suppress spaces for registration.
Note: If no server's telephone number is registered, an account number cannot be registered.

## 6.6 FAX2NET SERVICE

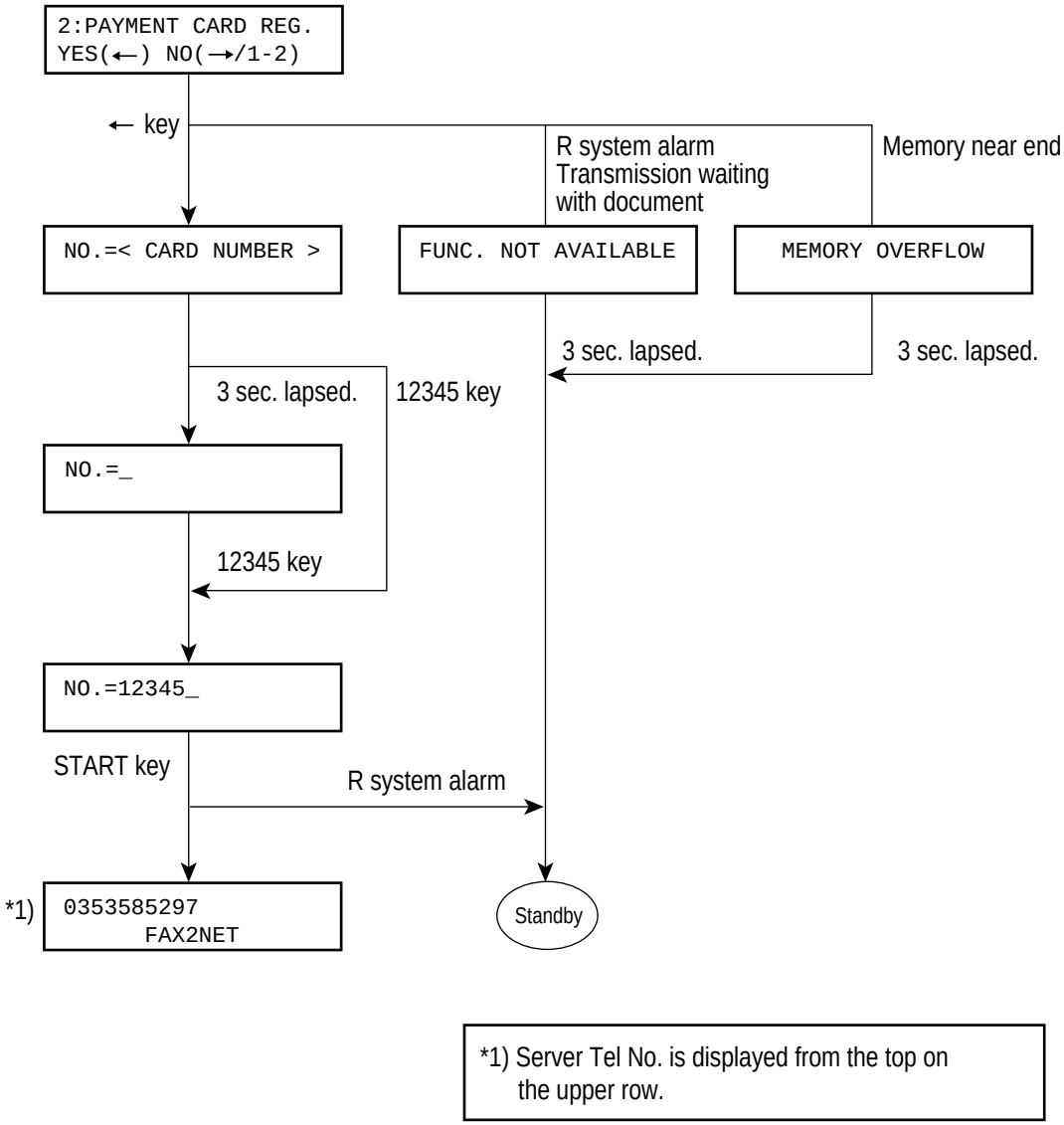


6.6.1 WEB Retrieval Transition




*1) One-touch keys 1 to 10 only can be selected.
*2) Web addresses are displayed from the top on the upper row. The broadcasting is inhibited.

6.6.2 PAYMENT CARD REGIST



## 6.7. Operation Rules

### 6.7.1 Outline of Operation

(1) Selecting OT in which an E-mail address is registered

1) When OT is selected at confidential sending, relay request sending, polling reception, or tune dial before calling, message “ILLEGAL OPERATION” is displayed, and OT cannot be selected. At real-time calling, message “ILLEGAL OPERATION” is also displayed, and OT cannot be selected.
2) When no account number is registered, if a single destination, broadcasting destination, or group destination is registered, OT cannot be selected.
3) When an account number is deleted, if it is already registered as a group, it is deleted from the group destination.
4) When the START key is pressed after a selected destination is displayed, if there is no document, message “LOAD DOCUMENT” is displayed.

(2) Selecting OT in which a Web address is registered
Apply (1), 1) and 2).

(3) An E-mail and Web addresses cannot be searched by the search function.

(4) Valid keys at registration of various information

| Item | Valid key | Max.number of digits |
|---|---|---|
| Web address | Ten keys 0 to 9, *, #, hyphen, OT1 to OT10 | 64 |
| E-mail address | Ten keys 0 to 9, *, #, hyphen, OT1 to OT10 | 64 |
| Server telephone No. | Ten keys 0 to 9, *, #, hyphen, OT8, OT9, OT10 | 32 |
| Account No. | Ten keys 0 to 9, OT9 | 16 |
| International telephone No. | Ten keys 0 to 9, OT9 | 10 |
| Payment card No. | Ten keys 0 to 9, OT9 | 20 |

(5) Character allocation to one-touch keys
OT1 : .
OT2 : _
OT3 : ~
OT4 : ”
OT5 : /
OT6 : @
OT7 : CAPS
OT8 : +
OT9 : Space
OT10: P (Pause)

(6) Ten key character display sequence at registration of E-mail or Web address

| | |
|---|---|
| Ten key 1 | 1 |
| Ten key 2 | 2 -> A -> B -> C |
| Ten key 3 | 3 -> D -> E -> F |
| Ten key 4 | 4 -> G -> H -> I |
| Ten key 5 | 5 -> J -> K -> L |
| Ten key 6 | 6 -> M -> N -> O |
| Ten key 7 | 7 -> P -> Q -> R -> S |
| Ten key 8 | 8 -> T -> U -> V |
| Ten key 9 | 9 -> W -> X -> Y -> Z |
| Ten key 0 | 0 -> 1 Symbol -> 2 Umlaut character -> Norway character->Symbol (Note 1, Note 2, Note 3) |
| Ten key * | * |
| Ten key # | # |

Note 1) 0 -> Umlaut character -> Norway character -> Symbol at NATIONAL CODE = GER

Note 2) The Umlaut character, Norway character, and " · " cannot be selected at registration of an E-mail or Web address.

Note 3) Based on the symbol display sequence (. _ " / @ \ % ! # & ' ( ) * — : ; = ? · ).
* Symbols @, \, ", _, ~, and % cannot be specified at registration of an ID.

(7) A server telephone number, account number, international telephone number, and E-mail or Web address can be initialized with ALL DATA CLR, LOCATION DATA CLR, or DEFAULT TYPE SEST.

---

1 Symbols (! # & ' ( ) * + , — . / : ; = ? @ \ " _ ~ % · )

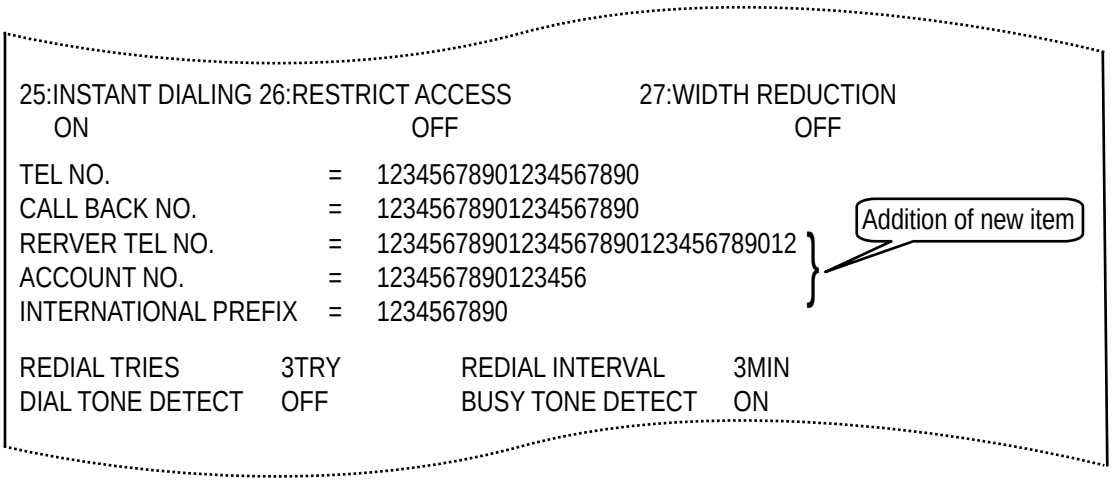
2 Umlaut characters (ä ß ñ ö ü)

3 Norway characters (Æ Å Ø æ å ø)

## 7. Report

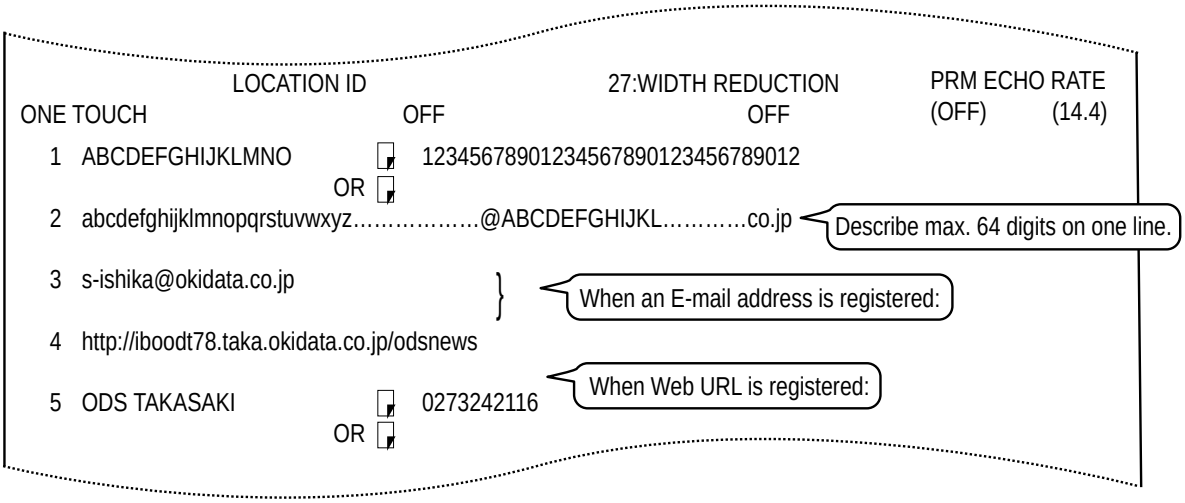
### 7.1 Configuration Report

The following items are added unconditionally. (For details on the number of registered digits and types for each item, see Operation.)


25:INSTANT DIALING 26:RESTRICT ACCESS 27:WIDTH REDUCTION
ON OFF OFF
TEL NO. = 12345678901234567890
CALL BACK NO. = 12345678901234567890
RERVER TEL NO. = 123456789012345678901234567890 12
ACCOUNT NO. = 1234567890123456
INTERNATIONAL PREFIX = 1234567890
REDIAL TRIES 3TRY REDIAL INTERVAL 3MIN
DIAL TONE DETECT OFF BUSY TONE DETECT ON
Addition of new item

### 7.2 Telephone Directory List Report

Describe an E-mail address and Web URL at a one-touch definition portion. The E-mail address and Web URL must also be described in lowercase letters.
URL must be described with http://.
(For details on the number of registered digits and types for each item, see Operation.)



## 7.3 Lowercase Letter Description Support

### 7.3.1 Location ID

A character string including lowercase letters and symbols can be described in the Location ID column of the following reports:
- Telephone directory report (Total number of registered digits)
- Broadcasting entry report (First 20 digits)
- Broadcasting confirmation report (First 20 digits)

### 7.3.2 Distant Station ID

A character string (first 20 characters) including lowercase letters and symbols can be described in the Distant Station ID column of the following reports:
- Activity report
- Power outage report
- Message confirmation report
- Active memory files
- Protocol dump

## 7.4 Description of Communication Mode Column

Describe information about the FAX2NET service communication in the MODE column of the following reports:
- Activity report
- Power outage report
- Message confirmation report
- Active memory files
- Protocol dump

<Contents of MODE column>

| | |
|---|---|
| FAX over IP (International call) | FNET |
| FAX to E-MAIL (E-mail) | FNET |
| Web retrieval (Web print request) | WEB |
| Broadcast including FAX over IP or FAX to E-MAIL | B.C. |
| Payment card registration | P-CARD |

## 7.5 Service Code Description

Add service codes 909D and 14D0 to the following reports:
- Activity report
- Power outage report
- Message confirmation report
- Protocol dump

## 8. Service Codes

The following service codes are assigned for the FAX2NET functions:

- 909D

A telephone number to be called was composed of only a dial prefix and international telephone prefix (and hyphen), and a sending destination telephone number to be transmitted to the FAX2NET server was not found.

- 14D0

The FAX2NET server returned DTMF tone “D” that meant “no good.”